

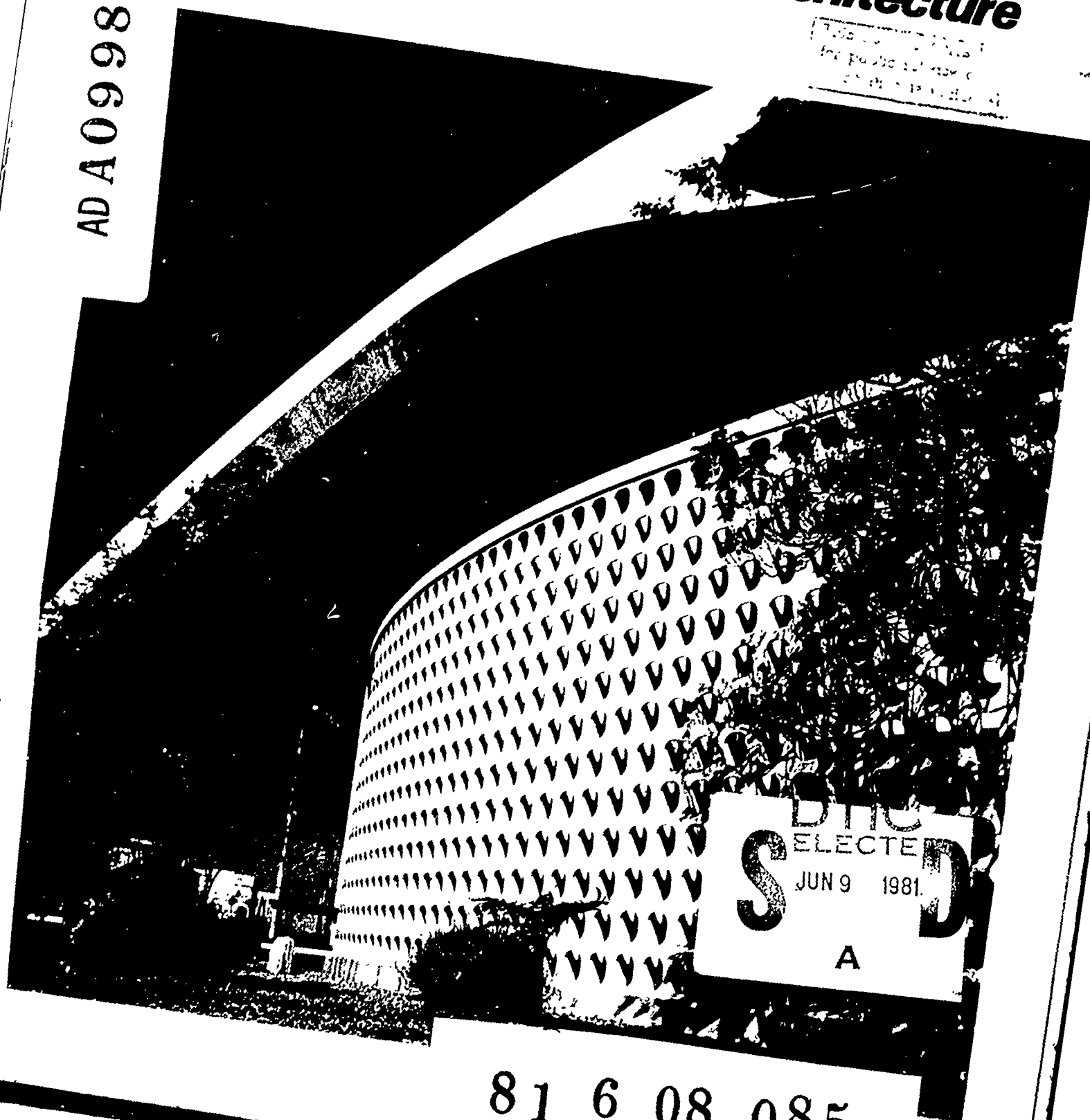


U.S. Department  
of Transportation  
Federal Aviation  
Administration

# A Study of Airports Design, Art & Architecture

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INFORMATION

PREPARED BY FEDERAL AVIATION ADMINISTRATION  
COMMUNITY AND ENVIRONMENTAL NEEDS DIVISION, APP-600  
APRIL 1981

RELEASE OF FAA HANDBOOK ENTITLED  
DESIGN, ART AND ARCHITECTURE - A STUDY OF AIRPORTS

The Federal Aviation Administration has published an illustrated reference, 91-page source document with specific experience and observations of various design treatments. This publication is directed to airport managers, operators, architects, interior designers, landscape architects, graphic specialists, and others.

The document emphasizes achieving an attractive airport while improving the safety and efficiency for the airport user. Increased productivity can reduce operational problems which often plague airport managers. Numerous examples, careful evaluations, and good design concepts are offered in this publication. It is a source of ideas.

One key factor which is part of the design process is the necessity to have a carefully conceived graphics program. Ideas and suggestions are included on how to improve the clarity of messages and how to emphasize the right thing at the right time. Good design includes ensuring that graphics are properly sized and located, that they are clear to understand day or night, readable in good weather or poor, as well as comprehensible by the foreign visitors or those who are color blind.

The publication also includes examples of how some communities acquired and have used works of art and what special consideration may be necessary to accommodate those works to the best advantage.

Good design is no mistake! This effort is the first of its kind, not so much on how to do something, but to make those interested in man's environment aware of what has been done, the problems to watch out for, and with whom to talk for additional information. It is an effort to raise the awareness level of all interested parties to improve the quality of life, especially in our busy, often stressful airport terminals.

Design, Art and Architecture - A Study of Airports, may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 050-007-00575-0; Price \$5 (subject to change without notice).

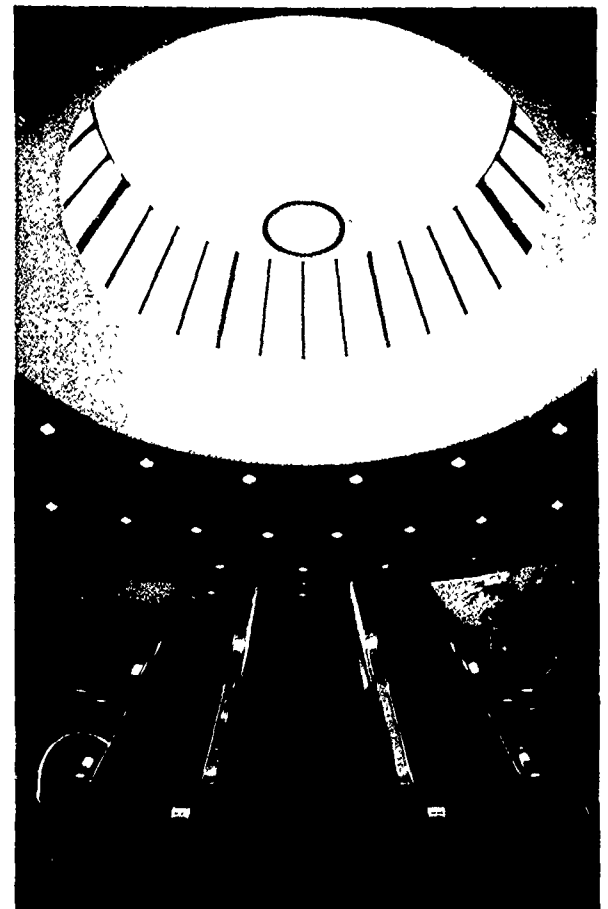
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Examples and Ideas  
to Stimulate  
and Improve the  
***Design, Art  
& Architecture  
of Airports***

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The contents of this manual reflect the work and views of Mr. Donald P. Bowman, who is responsible for the facts and accuracy of the data presented herein. Mr. Bowman is a member of the American Society of Landscape Architects. This manual does not constitute a standard, specification, or regulation of the Department of Transportation or the Federal Aviation Administration.

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*Cover photo and all others unless otherwise noted were taken by Donald P. Bowman, ASLA.*

# Design, Art & Architecture of Airports

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A technical committee was formed to work out final details, with public attitudes given high priority.



### 12 Aspen

One of the best examples of applying various energy collection or conservation ideas with a sensitive concern for the environment.



### 16 Baltimore

Convenience to the traveling public was a prime consideration in the entire design of the new terminal.



### 18 Bozeman

The airport terminal reflects the area using native materials and a concern for the wilderness of the region.



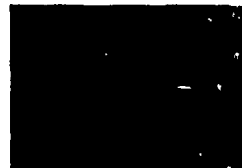
### 20 Cincinnati

There are three terminal units, each capable of being expanded independently without affecting adjacent units or aircraft parking areas.



### 24 Cleveland

Hard, fast design commitments were established by the sponsor to enable the architect to perform effectively.



### 28 Corpus Christi

A sweep of green grass, palm trees, and an attractive terminal greet airline passengers.



### 32 Dallas-Ft. Worth

The human and natural environment were enhanced by many careful design considerations.



### 36 Detroit

The international terminal looks sculptured. Carpets help to direct the traveler, and those arriving or departing are kept separate.



### 38 Fresno

Design has reduced confusion for the traveler. Spaces are well illuminated and uniform with a continuity of materials.

## Contents



### 40 Houston

Interior and exterior graphics are color keyed with primary consideration given to the comfort and convenience of passengers.



### 42 Indianapolis

The airport management has recognized the value of a well developed, equipped, and staffed maintenance and beautification program.



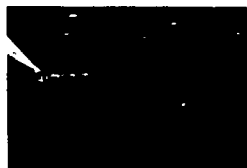
### 44 Jacksonville

Carpeting extensively used throughout the terminal is noted for its noise absorption, reduction of falls, and lower maintenance costs.



## 46 John F. Kennedy

This airport is a major gateway to America where various works by American artists are displayed.



## 50 Las Vegas

To the arriving or departing passenger this terminal is distinctive not only in sight but in sound.



## 52 Lincoln

The terminal's ultramodern configuration of weathering steel, slatted aluminum ceilings, glass and brick also allows for uncomplicated expansion.



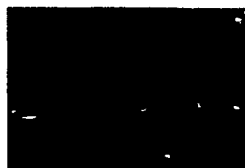
## 54 Miami

Projects are reviewed at the critical conceptual stage by the Design Critique Committee of the Dade County Aviation Department.



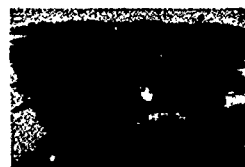
## 58 Minneapolis

New graphics systems are being installed in the terminal. Considerable efforts have been taken to reduce adverse noise and to reduce energy use.



## 60 Norfolk

A key element was strong leadership and a commitment by the sponsor to provide an attractive facility for the public and lessee.



## 64 Orlando

Design criteria include 41 components with emphasis on human scale and aesthetics which reflect Florida's environment.



## 66 Palm Springs

Detailed planning began with expected users. An analysis of local, regional, and national economic trends recognized special user needs.



## 68 Portland

Passenger convenience and comfort reflect local materials, attitudes, and sensitive concern about the environment, noise, and maintenance.



## 72 St. Louis

The Department of Engineering/Planning coordinates developmental efforts among the airlines, local managers, tenants, and surrounding communities.



## 74 San Francisco

Design for the placement of art works was considered early with an art/environmental working committee established.



## 76 Seattle-Tacoma

Good design is not accidental but results from careful evaluation of data and information.



## 78 Springfield

All buildings will be design coordinated to give coherence and unity to the entire airport complex.



## 80 Tampa

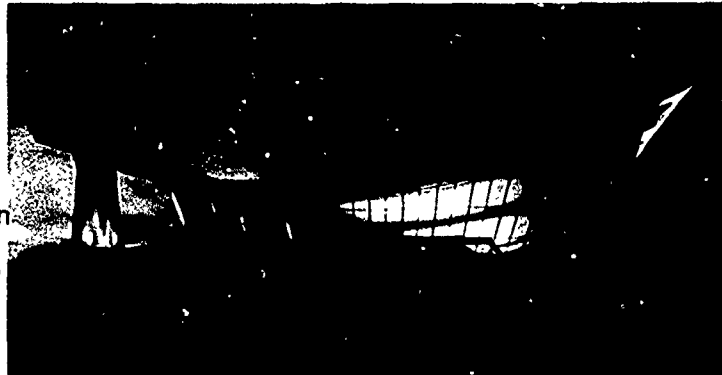
Basic design goals established by the Aviation Authority keep the public in mind—comfort, convenience, eye appeal, and emphasis on the "Florida feeling."

## 86 Appendices

1. Background information for the acquisition of works of art:  
Atlanta, New York, San Francisco, Seattle-Tacoma.
2. Bibliography

# Introduction

It has been stated that in America, our transportation systems are among our proudest accomplishments. They provide us with great mobility, while shaping the man-made environment, our daily routines, and our visual surroundings. An investment in the design of transportation systems can produce humane and pleasant places and improve the quality of our environment.



U S DOT Official Photo



State of Hawaii



Ke-Ahole Airport Authority

Attention to design quality can yield substantial economic benefits. Attractive and efficient design can increase ridership and support for public transit as well as promote safety and economy in operations. While the aesthetic benefits of design quality often elude quantification, we recognize that transportation is not an end in itself, and that its design and operation must support efforts to improve the human environment and enhance the social, commercial, and cultural resources of our communities.

The Department of Transportation encourages good design, art, and architecture in transportation facilities and services. The environmental design arts may be combined with other technical skills in an interdisciplinary approach to planning, constructing, and operating transportation systems.

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# Foreword

## Ideas and Suggestions on Design, Art, and Architecture

This document has been prepared as part of the FAA's program to encourage improved design, art, and architecture in aviation facilities.

It is directed to those airport sponsors and their architects who are considering the design and construction of new or expanded airport facilities. Concepts related to design, art, and architecture in public places are discussed. While not all are airport projects, the illustrated concepts could be adapted to both general aviation and large air carrier facilities. Related slides on architectural treatment, works of art, and graphics used in airport terminals are available on loan through Federal Aviation Administration (FAA) headquarters, regional, or airports district offices.

We hope that the ideas and examples will stimulate innovative designs by showing what others have done. FAA does not intend to dictate what constitutes good design, art, or architectural style. Rather, our goal is simply to encourage sponsors and architects to improve the designs of airport facilities.

### **How and Why This Study Was Undertaken**

Until recently, information has not been readily available about the aesthetic treatment of airports. No one data source included information on where works of art have been featured or where the architectural, interior, or landscape site design has been effective. The FAA has received requests for such information from many sponsors who are interested in good design. The only references available until now were super-

ficial and based on the memories of casual observers.

It became apparent that some effort should be undertaken to review, collect, and publish this data. Letters were sent to all FAA regional planning staffs requesting the names of those airports, terminals, and FAA facilities recognized for notable architectural design, landscape treatment, outstanding interior treatment, or exceptional use of graphics. The number was surprising and, as a result, more than 30 airports were visited in six geographic areas. Due to the limits of time and funds, many others had to be by-passed, and obviously the examples selected by no means exhaust the possibilities.

At each airport visited, we held interviews with the airport manager and staff and often with members of the responsible design firm. Those interviewed were asked:

- How did you accomplish your airport project?
- Who wrote the scope of work?
- Whose idea was it?
- Who made or approved design ideas?
- Did you look at other airports during the planning stage?
- What would you do differently if you had to do it over?
- Would the kind of study we're proposing be of any use?

Response to this last question was encouraging, and the overall enthusiasm of the airport authorities and designers reflected pride in their facilities.

In preparing this report, we gathered information from many sources, took hundreds of pho-

tographs, and walked through miles of airport corridors. Airport operations, maintenance, and security people provided data, access, and insight into behind-the-scenes problems.

### **A Commitment is Necessary**

The most notable airport projects are the result of a strong commitment by the sponsor. Furthermore, the best achievements are those where the sponsor's commitment is reinforced by the design firm and the consultants, with all parties working together as a team. Community support has played a major role in resolving such problems as landscaping the Norfolk Botanical Gardens, commissioning the murals in Cincinnati, and protecting the environment on and around the Pitkin County Airport in Aspen, Colorado.

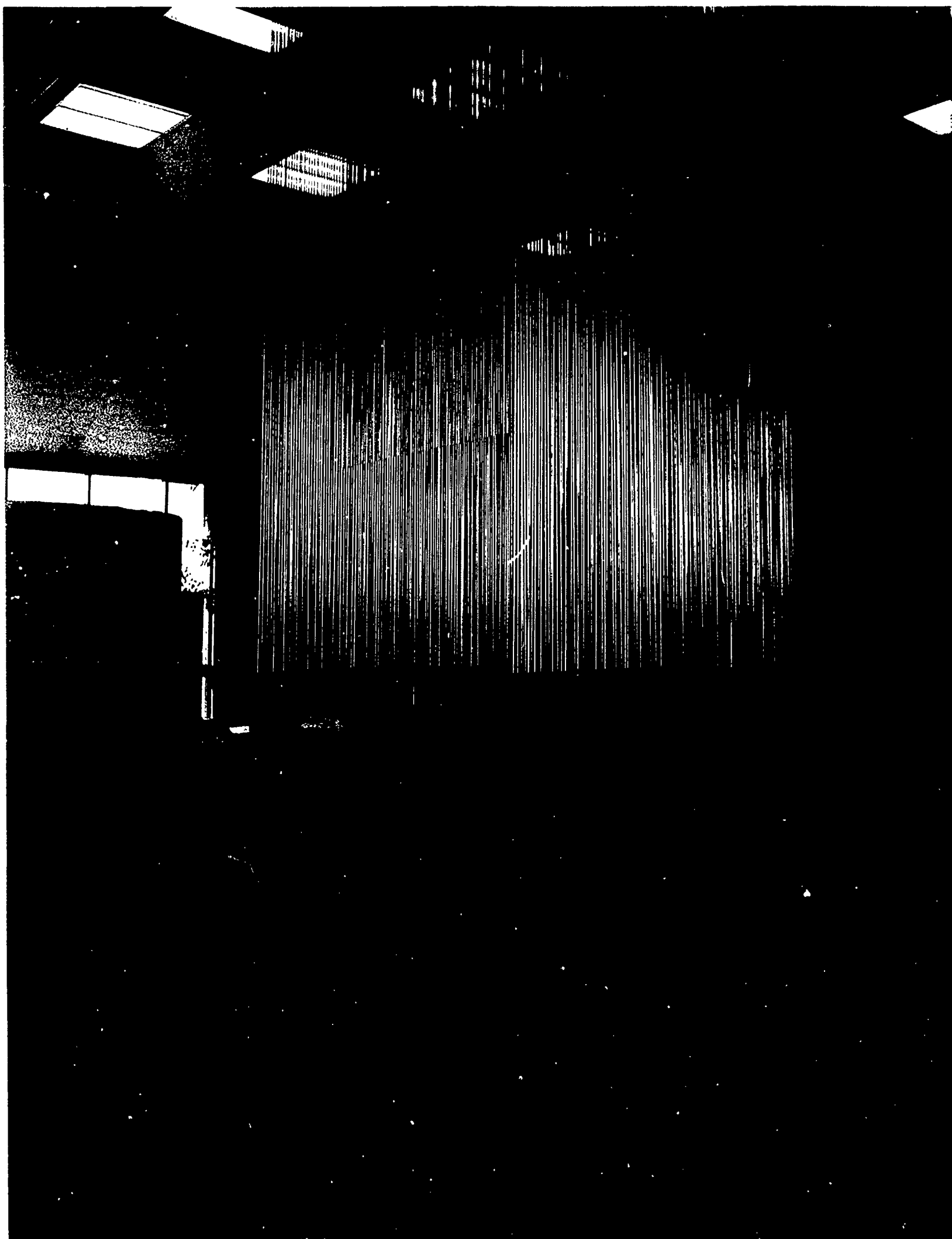
This study is not meant to encourage lavish architectural monuments, but rather to stimulate those contemplating new airport projects to determine early in the planning stages what they want to achieve. Public feelings, attitudes, and opinions are significantly affected by design features. First impressions can be especially long lasting. For this reason, airport facilities should include well-conceived, well-planned, and aesthetic amenities.

Understanding what others have already achieved makes it possible to build and improve on these accomplishments. Communication among sponsors, designers, and other consultants should result in a commitment for a better, safer, and more functional and attractive airport.





# ***Examples and Ideas***



## Allentown-Bethlehem-Easton

For the new **ALLENTOWN-BETHLEHEM-EASTON** Airport terminal complex, sponsors retained approval authority at various points during design development. Airline representatives were included in the design process when the work was 75 percent completed. At that point, a technical committee of the three principal carriers was formed to work out final details. Public attitudes and desires were always given high priority.

It is important to note that design coordination is an ongoing process at the airport. Readily available professional assistance helps prevent the accumulation of small decisions which could eventually erode the initial design concepts.

The new airport terminal complex reflects the area's steel and concrete industries. The bold, attractively designed building of massive exposed steel beams, concrete, brick, and glass is three stories tall and provides column-free interior spaces. Steel is used in an unconventional way, in a "bent" concept that resembles a through-truss bridge structure. The result is a slope-sided building, offering a maximum of unobstructed interior space of 106,500 square feet. This interior allows design flexibility should changes be necessary in the future. Fifty-two percent of the space is leasable. Gate positions are provided by a satellite terminal connected to the main terminal by a 300-foot tunnel underneath the apron. This tunnel is brightly lit, and large panels of colorful carpet reduce noise as well as improve appearance. The terminal

is designed for expansion; a doubling of space can be achieved.

A unique feature offered to the public on the main terminal level is an all-faiths chapel. It is small, cylindrical, and furnished by the area Kiwanis Club.

Revenue-producing display panels are well placed in the main terminal. These panels are permanently installed at locations where they do not interrupt pedestrian flow, obscure views, vistas, or lines of sight conceived by the design architect. Panels are also placed in areas where the public is most apt to have time to observe, read, or study the display.

The Airport Authority commissioned a large sculpture of naval brass and bronze. The Authority originally requested that the work depict flight and motion. But the sculptor, the late Harry Bertoia, convinced the Authority the work should instead be designed to bring calm to a busy airport environment. The sculpture is sus-

pended from the ceiling of the waiting area, above the stairwell leading to the departure tunnel. It cost \$15,000, paid from a contingency fund. (A Bertoia work is also located in the Dulles terminal.)

Wall-to-wall carpeting was considered but rejected in favor of quarry tile floors because winter snow and moisture would be tracked in. However, limited carpeting is used in those areas not subject to adverse conditions.

Local industry welcomes the opportunity to construct special displays in the terminal. These can take many forms and can be major design features as well as a source of revenue. The airport terminal has a huge truck on display which is painted in the same bright colors used in the interior design scheme of the terminal. The truck is replaced each year by a new model. The architectural design must consider how to accommodate such displays and how to show them off to maximum advantage.

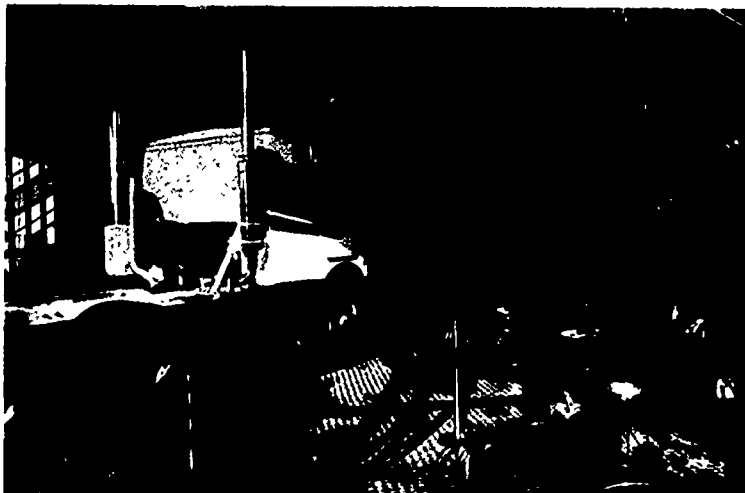
**Airport Contact:**  
ALLENTOWN-BETHLEHEM-EASTON Airport  
Airport Manager  
LeHigh-Northampton Airport Authority  
LeHigh Valley, Bethlehem, Pennsylvania 18001  
Telephone: 213-264-2831

**Credits:**  
G. Edwin Pidcock Company, AIA  
2451 Parkwood Drive  
Allentown, Pennsylvania 18103  
Telephone: 215-791-2252

Wallace & Watson Consultants, Bethlehem

Sculpture: Harry Bertoia  
Barto, Pennsylvania

**Features of Special Note:**  
Architecture  
Interior design  
Sculpture





## Aspen

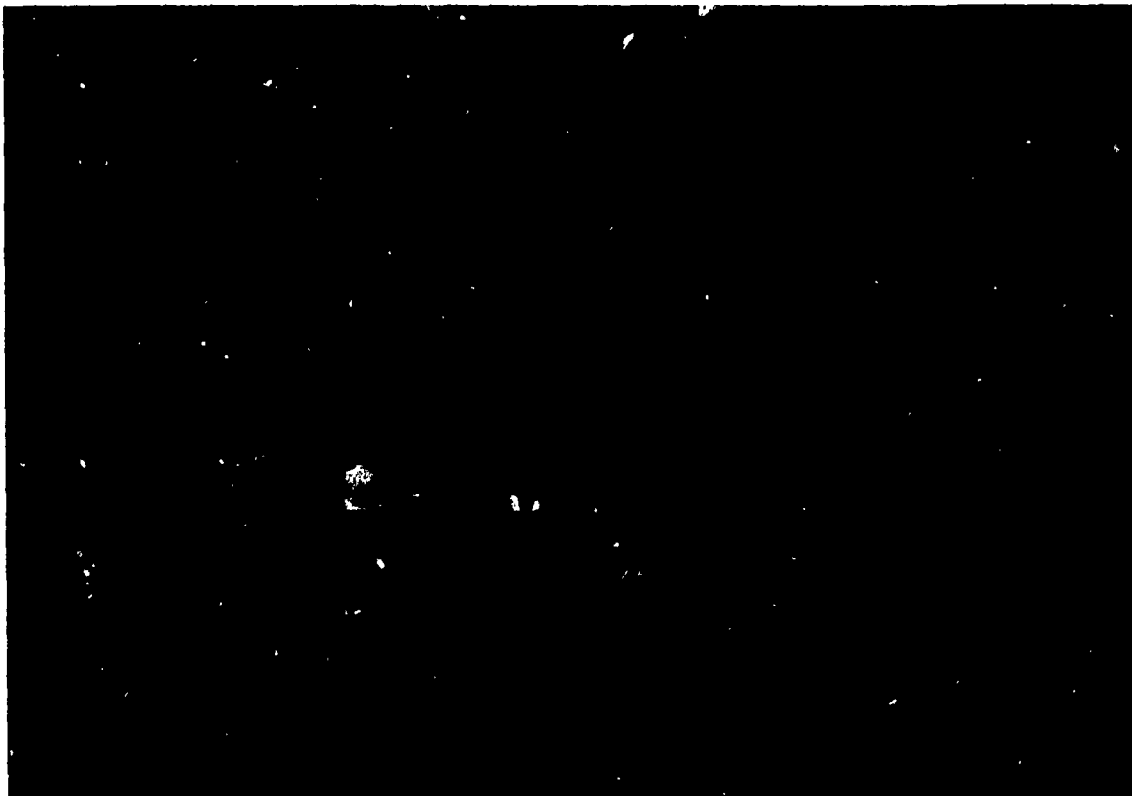
The new **PITKIN COUNTY** Airport terminal in Aspen, Colorado is one of the best examples in the country of the application of energy collection and conservation methodologies that show sensitive concern for the environment. An overall design objective when building the terminal was resource conservation. The architects designed the building to use native materials, standardized components, and construction techniques that place a low demand on resource materials and specialized labor.

When it was constructed, the **Pitkin County** air terminal was the Nation's largest passively solar heated structure. It was the first public building in the United States to use a movable insulation system. This system reduces dependence on irreplaceable fossil fuel.

The basic elements of a passive solar system are abundant southern glazing with movable insulation, interior thermal mass, and a well-insulated structure. Most of the southern wall in this airport terminal is double glazed with fiberglass sheets. These will eventually be replaced with glass. This system allows solar energy to penetrate into the building during sunny winter days. During the evening or on cold, cloudy days, the space between the glazing is filled with styrofoam beads (beadwall) to provide insulation. There are also skylights facing south with fiberglass glazing and movable insulating louvers fabricated locally. On the remaining north, east, and west walls, the building is extremely well-insulated

with minimum window exposure. Small windows placed high in the north and east walls coupled with earth berming against the outside surface of the walls reduce heat loss. Well-insulated structures are required in **Pitkin County** by the "Energy Conservation and Thermal Insulation Building Code Amendment" dated June 1975.

The terminal building consists of three areas linked together to achieve maximum solar orientation for the uninterrupted south walls and the solar absorbing inner north walls. Entry and exit to the building are through the east and west portions of the terminal. This allows for efficient movement of





passengers and goods as well as future expansion. The terminal is also designed to accommodate a comprehensive transportation center for air, auto, and ground mass transportation systems serving Aspen and its contiguous population centers.

A simple, clean architectural design character successfully harmonizes with the natural earth forms surrounding the building. The attractive wood earth tones and textures of the terminal interior reflect the natural tones and textures of the Aspen area. Paintings, photos, and sculpture are added refinements.

The majority of residents and visitors to Aspen appreciate the natural environment. As a result, it is no accident that the site planning for the airport terminal blends perfectly with its mountain valley setting. Native grasses and wildflowers are used with clusters of quaking aspen and other native plants. Earth mounding and huge boulder placement are carefully designed to achieve zero runoff by encouraging water to percolate into the soil.

User requirements differ from one airport to another. Airport and terminal designs must therefore be based on a careful evaluation of the users of the facility. Many airport users traveling to Aspen intend to partici-



Near Aspen is a remote controlled air-ground communications system building. This type of facility is often located in an area some distance from the airport, at a site that offers optimum air to ground navigational communications coverage. Generally, the structure that houses the antennae and receiving and relay equipment is purely functional with few aesthetic considerations. In this particular case, the structure is located in a residential area. The local property owners objected to this intrusion. FAA's Airway Facilities Service redesigned the structure to blend with the architectural style of the area without sacrificing the functional requirements of the unit.

**Airport Contact:**

PITKIN COUNTY Airport  
Airport Manager  
506 East Main Street  
Aspen, Colorado 81611  
Telephone: 303-925-8698

**Credits:**

Architects:  
Copland, Finholm, Hagman,  
Yaw, Ltd.  
210 South Galena  
Aspen, Colorado 81611

**Planners:**

Design Workshop  
415 South Spring  
Aspen, Colorado 81611

**Solar consultants:**

Zomeworks Corporation  
P. O. Box 712  
Albuquerque, New Mexico  
87103

**Features of Special Note:**

Architecture  
Site planning  
Environmental consideration  
Art work

pate in winter sports. Consequently, they carry double the luggage of the normal traveling public, and that luggage is complicated by bulk and size. Because skis are difficult to handle in the average taxicab or compact car, buses are much more suited to the task of transporting skiers and their gear from the airport to their lodgings. Fortunately, winter sport enthusiasts are often gregarious and readily adapt to mass transit systems. Such considerations as these affect the details of site design, access roads, parking, curb pick-up and drop-off, as well as normal building requirements.





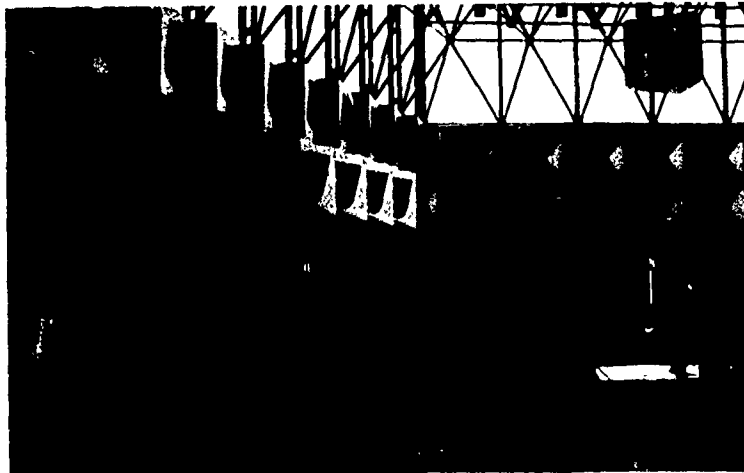


## Baltimore

The new terminal at **BALTIMORE-WASHINGTON** International can be defined in one word—exciting! The architectural character of the terminal building is intentionally conceived as a sculptural mass, with little reliance on the applied arts. A centrally located public meeting place at the ground floor baggage claim near the base of the escalators makes it easy for passengers to rendezvous. The meeting place is easy to find with its 25-foot diameter circle of red triangular tiles with the words "Meeting Place" ringing the space.

An innovative glass and steel canopy extends over the upper roadway along the entire facade of the terminal building, providing weather protection from curb to ticket counter for departing passengers. Individual passenger entrances for each airline, located near their respective boarding gates, decrease walking distances substantially. Ticket counters are conveniently located directly inside each entrance along the upper roadway, passengers are dropped off by car or limo just 60 feet away. Each airline is easily identified through the 1200-foot long window wall by extensive use of its logo or corporate symbol. Passengers have a maximum walking distance of only 500 feet from their drop-off point to their aircraft.

Each airline has a separate baggage claim area in the lower level that provides convenient pick up by car or limo directly outside. There are 1800 linear feet of curb space at the



lower level arrivals roadway and 1300 linear feet of curb space on the upper roadway departing level. The split corridor system is used to move people away from ticket or baggage check-in counters.

Two public waiting areas offer a quiet place to rest. The furnishings are upholstered in colorful material and the walls are carpeted in color coordinated patterns. Supergraphics using a stylized airport logo, either silk screened on glass or as part of a carpet mural, are placed in various locations. Interior paintings and plants are grouped and designed with proper lighting. While the basic walls of the terminal are either black or white, 11 dazzling red tile columns accent the terminal. Three of these columns house elevators. Other support columns are highly polished stainless steel. Required maintenance is low on both of these handsome architectural features. Carpeting is used extensively to reduce the need for and cost of maintenance.

Airlines want to be highly vis-

ible to the public. Recognizing that most airline logos and corporate symbols are bright and colorful, designers decided to include them as a decorative interior feature. Since the public is often unfamiliar with the airport terminal, the design and placement of these colorful logos help them find their desired carrier with minimum delay and confusion. Other colorful panels similar in size to those of the airlines identify terminal wings A, B, C, D, and E. These panels are adaptations of maritime signal code flags.

Access road directional signs are color keyed, as are the interior signs. Convenience to the traveling public was a prime consideration in the entire design of the new terminal.

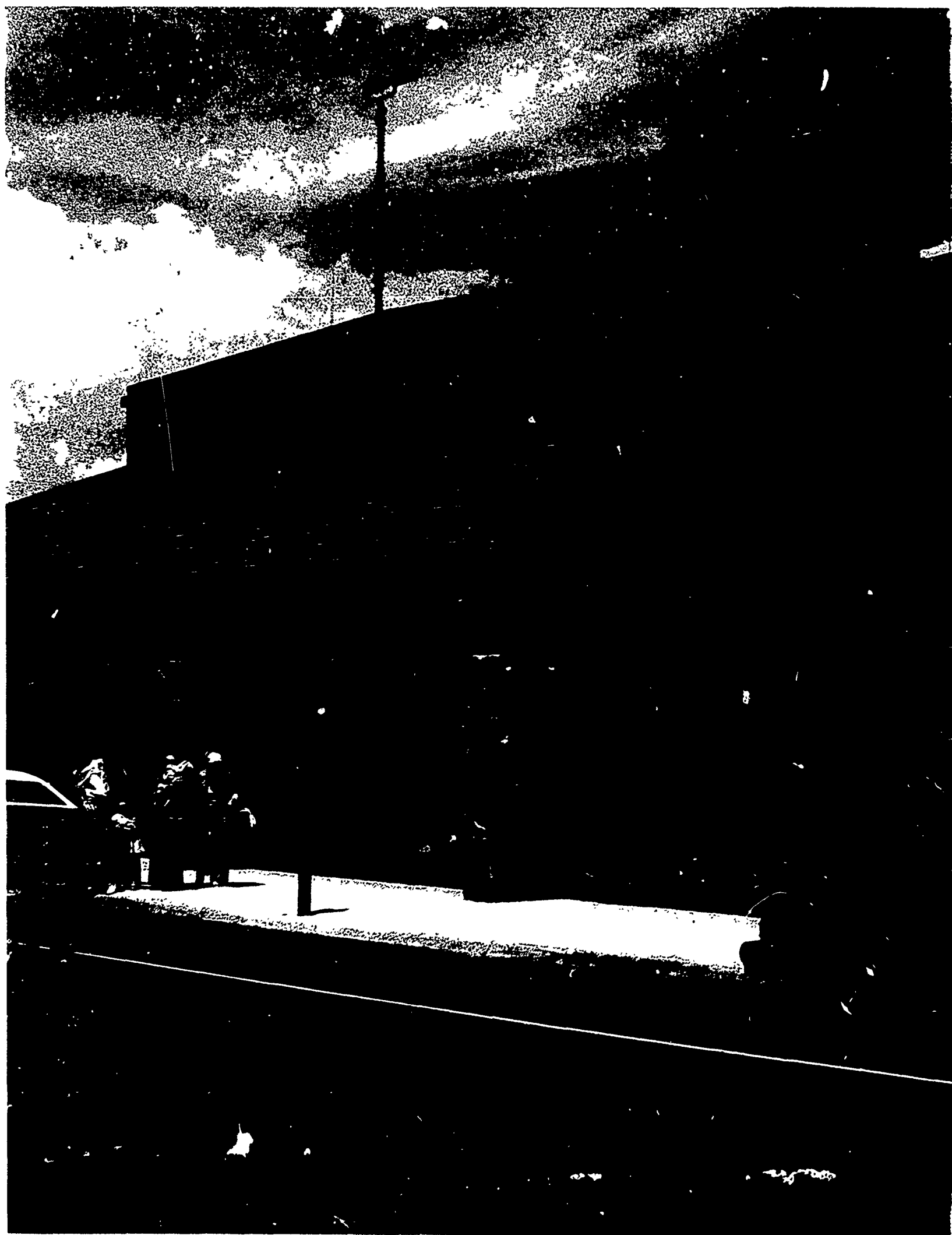
It should be noted that this major expansion project was accomplished *around* the existing terminal building. The designers thus had to allow for uninterrupted passenger flow and maintenance during the entire project. This was not an easy task.

**Airport Contact:**  
BALTIMORE-WASHINGTON  
International Airport  
Director  
P. O. Box 8766  
Baltimore, Maryland 21240  
Telephone: 301-787-7079

**Credits:**  
Friendship Associates  
Consulting Engineers &  
Architects  
P. O. Box 8613  
Baltimore-Washington  
International Airport  
Baltimore, Maryland 21240  
Telephone: 301-796-8044  
• Howard, Needles, Tammen &  
Bergendoff  
• Ewell, Bomhardt and  
Associates  
• Peterson & Brickbauer  
• Architectural Graphics  
Associates, Inc. graphics  
subconsultant

**Features of Special Note:**  
Architecture  
Interior design  
Signing/graphics





## Bozeman

Serene **GALLATIN FIELD** in Bozeman, Montana, is surrounded by extensive fields of grain, grazing cattle, and snow-capped mountains. This area of the country is primarily agricultural and has a flourishing timber industry. Tourists looking for open spaces and blue sky and those with a love of nature find the **Bozeman** area very appealing. Tourism here is growing; it is the third largest business in the state.

The recently opened airport terminal makes striking use of native materials. Massive boulders from nearby quarries complement the laminated wood beam ceilings. A fireplace near the baggage claim area welcomes the winter traveler with a roaring wood fire. Although few travelers see it, the airport manager's conference room is also graced with a wood burning fireplace. Illumination of the stone support columns along the entry canopy is both attractive and functional.

The two-level terminal is planned for expansion and can accommodate a restaurant at some time in the future. Ticketing and baggage check-in are located on the lower level at one end of the building. Baggage claim and rental cars are at the other. A small gift shop is located at the foot of the stairs. Gate positions are on both levels.

The stairs, centrally located, are a focal point set off by a striking flight of sculpted Canada geese. The geese are attractively arranged and appear to be swooping down to a landing in the ticket area from the second level. It is interesting to

watch the public entering this area and gazing up at the huge, graceful metal birds. The geese are the creation of a local sculptor, Jim Dolan. Each bird is unique in its flight configuration. Heads, feet, and bodies are handcrafted with individual features, all welded to form an extremely realistic work of art. The metal birds weigh approximately 55 pounds apiece and are suspended from the ceiling on solid steel rods to prevent them from rotating from the flight position.

"The Flight of the Geese" was sponsored by a local businessman and his wife and was given to the public as part of the terminal. As such, they re-

flect the citizens' love for nature and the wilderness of the region.

When commissioning works of art of this type, it is wise to request sketches or models of proposed works from the artist in advance. This will assure that the works fit into the architectural space allowed. Any structural, lighting, or other item of architectural treatment can be modified at this time or the art work can be modified to reduce costly changes later. Conceptual designs presented early will help insure a more successful final product and reduce the chances for misunderstanding.



### **Airport Contact:**

**GALLATIN FIELD**  
Airport Manager  
P. O. Box 146  
Bozeman, Montana 59715  
Telephone: 406-388-6632

### **Credits:**

#### **Consultants:**

**TRA**  
Architecture Engineering,  
Planning and Interiors  
215 Columbia  
Seattle, Washington 98104  
Telephone: 206-682-1133

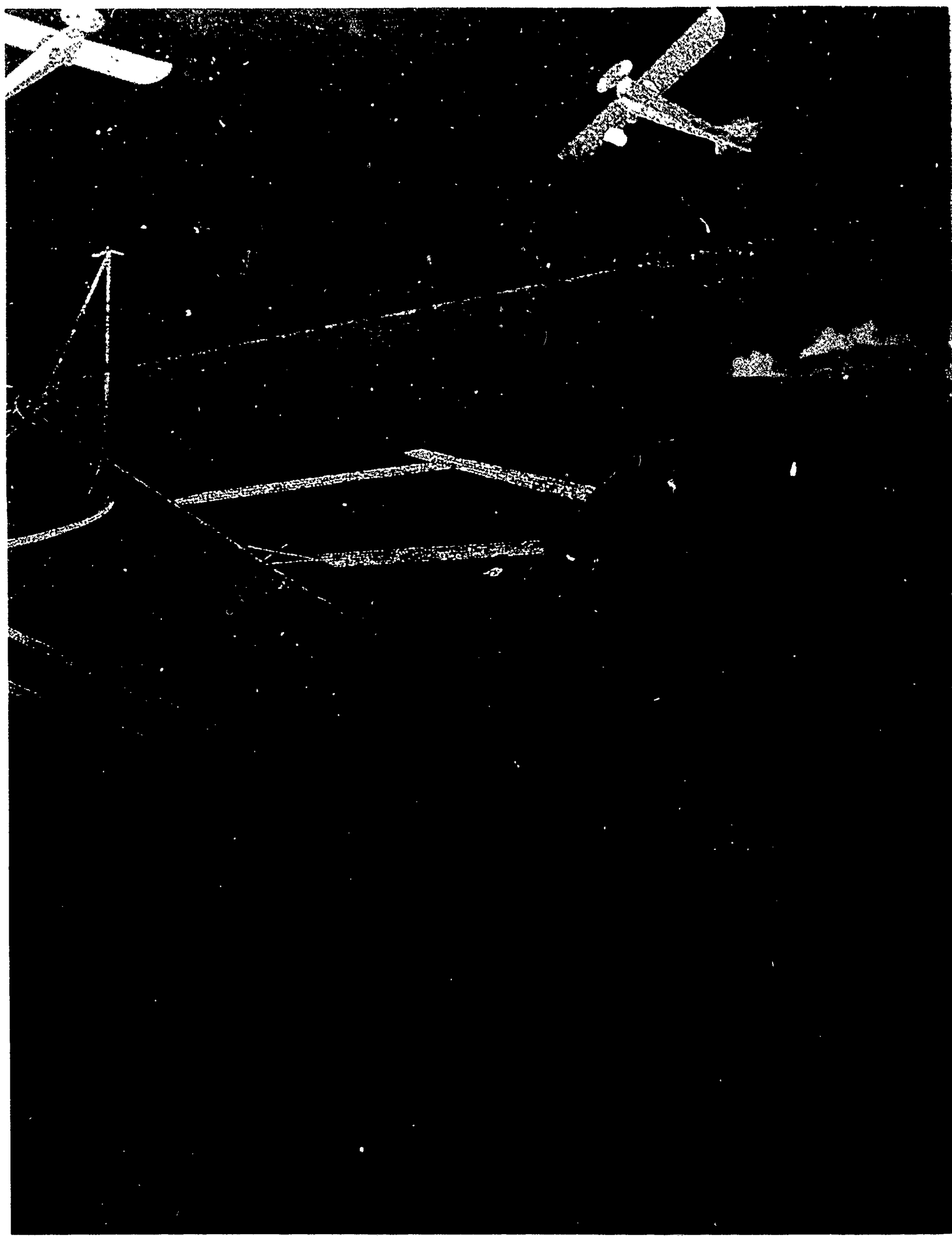
**CTA Cushing & Terrell**  
Associates  
Architects & Engineers  
Billings, Montana 59103

#### **Sculptor:**

**Jim Dolan**  
608 South 10th  
Bozeman, Montana 59715  
Telephone: 406-586-6171

### **Feature of Special Note:**

Architecture  
Sculpture



## Cincinnati

Ohio's **GREATER CINCINNATI** Airport is located in Boone County, Kentucky. The facilities opened in September 1974 and are operated by the Kenton County Airport Board, representing both Ohio and Kentucky. The terminal complex has three units, each designed to handle its own volume of aircraft, passengers, and automobiles on a self-sustaining basis.

Planning for the new terminal started in the 1960's. The Airport Board and airport staff began a series of meetings with the airport consultants, the airlines, and the airport's fiscal agents. During 1970, the airport's planning and development department, working closely with the airlines' technical committee, prepared an expansion program that called for building a new terminal and for remodeling the existing terminal. This program included the complete reconstruction of the aircraft parking ramp to provide 24 new gates, a new airport terminal loop road, a new 2500 car public parking lot, a new utilities and electrical distribution system, and new service roads. Ground was broken on June 1972; the new terminal was opened in June 1974; and the old terminal was renovated by February 1975.

The terminals have both arrival and departure facilities on the upper level. The terminal buildings are connected at the upper level to the baggage claim buildings by over the road, glass-enclosed passenger bridges. Bags may be checked at the ground level of the terminal buildings or at the ground

level of the baggage claim buildings. Most baggage is moved by an underground conveyor. However, pets or oversized items such as skis must be delivered by cart.

Passenger hold areas are conveniently located in the main terminal buildings near concessions and other facilities, eliminating long waits in isolated parts of the buildings. There are no holding areas at the gate positions. This procedure limits the number of security check points required.

Airline offices, operations, and maintenance facilities are located on the ground level of each concourse. Each terminal has a restaurant as well as a cocktail lounge, gift shops, and other public facilities, all centrally located.

Careful consideration is given to the needs of the deplaning passenger. Telephones and restrooms are conveniently spaced along the route to the baggage claim buildings. Passengers claim their baggage in the parking lot, convenient to public vehicles, taxis, and limousines.

The existing terminal building was remodeled inside and out so that the exterior is architecturally harmonious with the new terminal units. All public areas are refinished and provided with new furnishings. Carpeting is used throughout and the public address system is exceptionally audible.

Each terminal unit is capable of being expanded independently in several directions without affecting adjacent terminal units or aircraft parking areas.

Hold rooms may also be expanded without disrupting the concourses or concessions. This expansion can occur at any time without having to construct an entirely independent terminal unit. This design technique has become known as the Cincinnati Concept.

A number of important features make the Cincinnati Concept work. One of these is the common hold room area at the base of each concourse. This is not a new idea, but rather an old one revitalized. By accommodating security requirements, automated ticketing and check-in in these large hold rooms, the designers eliminated the bottlenecks that occur when hold rooms are separated for each individual aircraft. The concourses are not cluttered with exclusive hold rooms for specific airlines. When a flight is called, the passengers proceed directly to the jetway for boarding. The concourse can be easily extended at a minimal cost to accommodate additional gates or additional airlines.

Each terminal utilizes modular construction systems, including steel framing incorporating off-the-shelf long span trusses in conjunction with pre-cast concrete hollow core decking. High volume air conditioning units are used with a minimum of ducts. Exterior walls are constructed of metal panels in two styles and colors.

Cost for the completed average square foot was approximately \$37; this includes graphics, owner's furnishings, and interior finishes.

By far the most distinctive

features of the **Greater Cincinnati** Airport are the large murals mounted here on permanent display. Scenes of the 1930's "Industrial Giants," vividly portrayed in these mosaic masterpieces, hold special significance for Queen City residents. They have also received national acclaim for being the most outstanding series of art deco in the country.

The murals were originally designed to adorn the walls of Cincinnati's famed Union Terminal Railway Station. Although the terminal was built in the midst of a depression, the railroad spared no expense in making it a majestic "Temple of Transportation," complete with Italian marble floors and cascading fountains. German-born artist Winold Reiss was commissioned to design an appropriate decor for the terminal walls that would suit the station's grandiose architecture. Art deco, a modern art form that was just beginning to gain widespread popularity at the turn of the decade, was used to depict the 14 industrial scenes. Appropriately enough, art deco drew inspiration from the developing technology of the machine age, and was one of the first attempts to end the conflict between art and industry. It is characterized by its symmetrical style, intense exotic colors, and rectilinear design.

The Cincinnati landmark was purchased by Southern Railway in 1972, and the new owners announced plans to demolish the concourse portion of the terminal. This news prompted Cincinnati area residents to form a "Save the Terminal



Committee" to prevent the destruction of the 14 historic murals. Their campaign proved instrumental in raising funds to remove and transport the murals to their new home at the **Greater Cincinnati Airport**.

When the Kenton County Airport Board agreed to accept the murals, **Greater Cincinnati Airport** was in the midst of the terminal expansion program. Airport architects had to make additional specifications on the foundations and walls in order to support the strain of the eight-ton murals. Since construction was already under way at the time of their arrival, the murals were hoisted over structural steel beams and lowered into the building. All of these precautions paid off, however, and the priceless mosaics were safely installed throughout the complex.

Careful consideration was given to the placement of each mural, weighing aesthetic details such as color coordination and lighting effects in the various buildings. Situated amid the airport's ultra modern decor, the murals create a compelling contrast between Cincinnati's early emergence from the industrial era into the supersonic jet age of today. They are now in a prime location to relay the Queen City's proud industrial heritage to the millions of visitors who annually pass through the airport's gates.

Another unusual feature of the airport is the ground level dual roadway loop system that surrounds the close-in parking. This arrangement allows the public to discharge quickly departing passengers near the

check-in counters or pick up arriving passengers near the baggage claim building. Passengers can enter or leave either building directly to the parking lot without having to cross any roadway. The lighting system uses two distinct types of lamps: mercury vapor lamps in the parking areas and sodium lights to delineate the roadway system.

The airport is well landscaped. Earth berms and hedge plantings screen off unsightly areas and improve safety. Hundreds of trees provide cooling shade to acres of parking. Mass plantings of easily maintained ground cover and shrubs are also used in functional ways. The access road approach to the airport is well marked, and a large problem-free fountain is the focal point of the loop road juncture. The total landscaping budget was approximately \$400,000, including \$80,000 for the fountain.



**Airport Contact:**

GREATER CINCINNATI Airport  
Director of Aviation  
P. O. Box 75000  
Cincinnati, Kentucky 45275  
Telephone: 606-283-3151

Director of Planning &  
Development  
Telephone: 606-283-3166

**Credits:**

Heery & Heery Architects/  
Engineers  
880 W. Peachtree Street, N.W.  
Atlanta, Georgia 30309

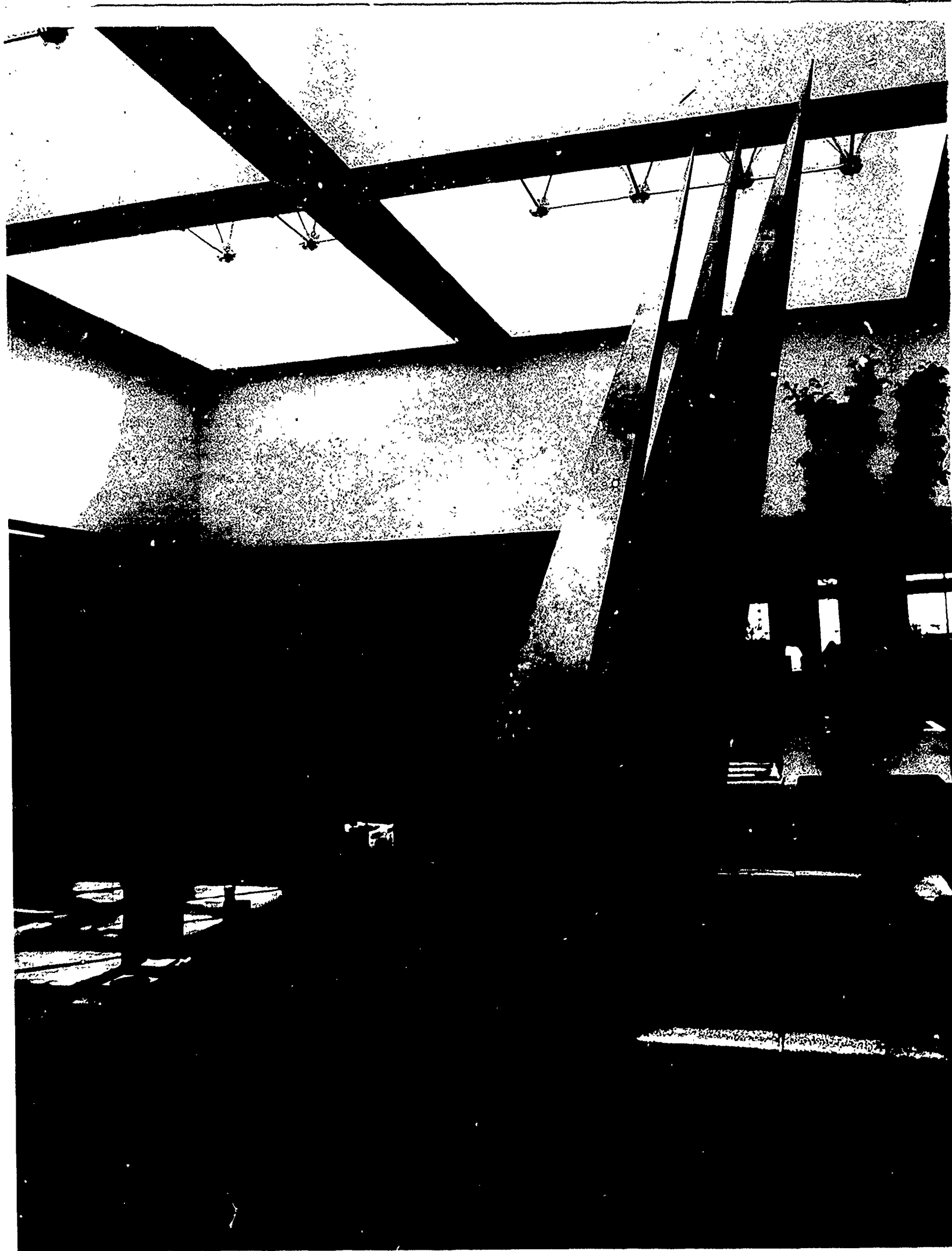
Landrum & Brown, Inc.  
Airport consultant

**Features of Special Note:**

Architecture  
Landscaping  
Mosaic tile work







## Cleveland

**CLEVELAND-HOPKINS'** south terminal was dedicated March 31, 1977, and is the first phase of a \$55 million airport expansion program. The budget includes landscaping, furnishings, interior and exterior graphics, and sculpture.

**Cleveland-Hopkins** International Airport is one of the few airports in the world where the traveler does not have to be exposed to the weather from the time the passenger leaves home until the time he or she is seated inside the aircraft. Most notable is a collector building which carries people on a moving sidewalk from a parking garage or from the RTA (airport rapid transit) which runs to downtown Cleveland. This building allows for free flow of passengers and visitors and does not interfere with the surface vehicles entering or leaving the airport terminal.

When the enplaning and deplaning roadway systems for the airport expansion were designed, five lanes were planned for each at the terminal. This reduces bottlenecks caused by buses pulling out and around parked and double-parked vehicles.

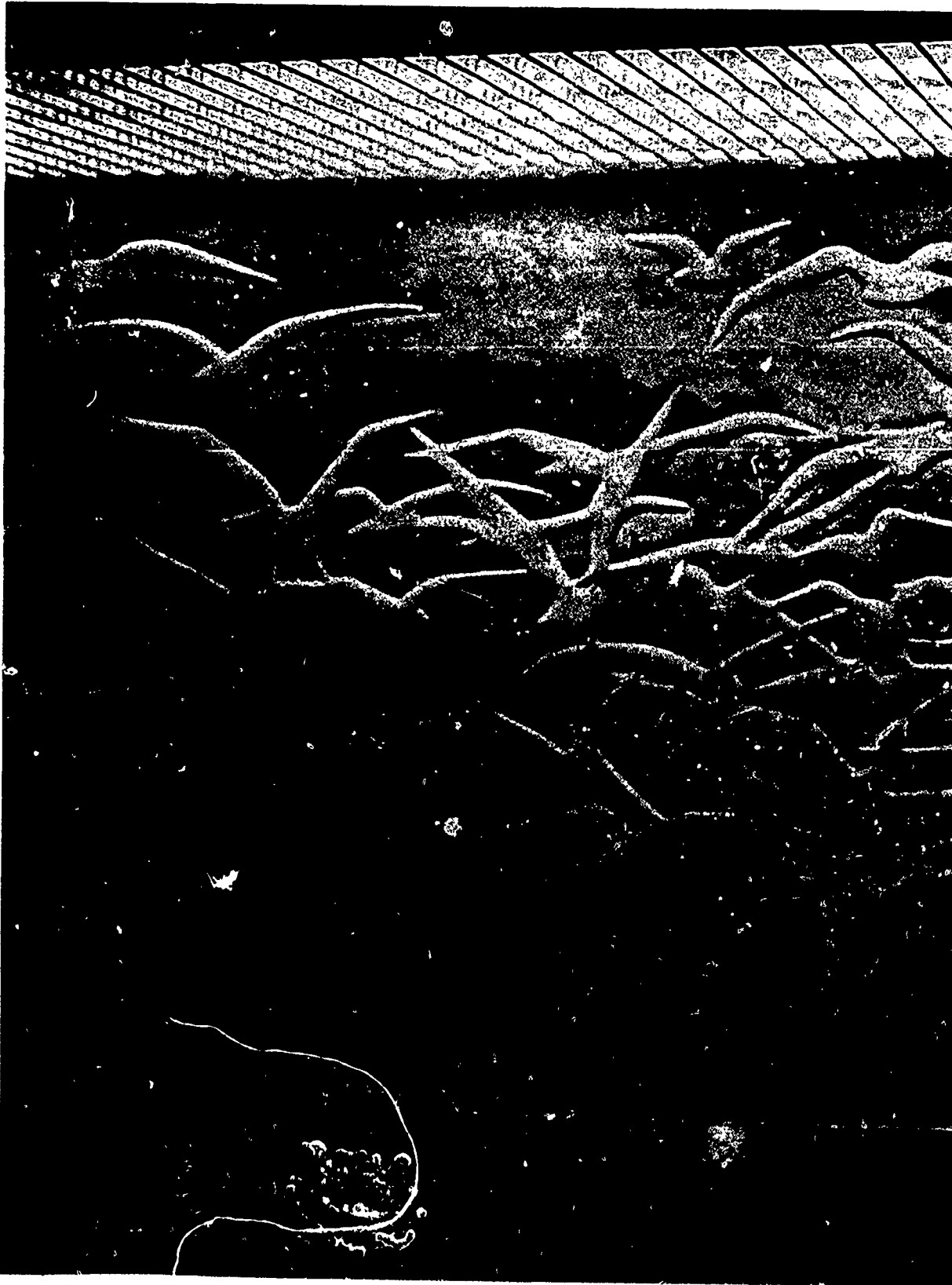
Plantings, street furniture, and graphic aids are placed with care to reduce confusion and improve general appearance. Recognizing how difficult it is to communicate with the traveling public, the designers concentrated on simple, effective directional graphics.

Carpets are color-keyed to visually aid the arriving or departing traveler. Blue carpet is used in enplaning areas, gold

carpet in deplaning areas, and red surfaces to indicate roadway or parking areas. The carpets themselves are specially designed to minimize and disguise cigarette burns.

When designing graphics to be used in airport terminals, it is important to consult with airline representatives and other concessionaires early in the design process. Airlines are generally concerned that airport graphics not interfere with their corporate graphics or detract in any way from the public visibility of their areas. Hard and fast design agreements established early allow the architect to perform more effectively.

The designers of **Cleveland-Hopkins** also gave full consideration to the needs of the majority of the handicapped. As a result, the terminal will be barrier free when completed. Representatives of the handicapped who were consulted during the design stages felt that signs should be simple, clean, and kept to a minimum. Handicapped people, they felt, are too often made to feel "put down" by standard handicapped signage.



Another problem is that designers often limit themselves to thinking of a handicapped person as someone confined to a wheelchair, blind, or with other physical handicaps. Yet a young mother with two infants and attendant baggage has a definite handicap, especially when it comes to navigating unfamiliar areas. More and more business people travel with heavy wheeled luggage or display or sales material, which handicaps them on curbs, stairs, and escalators. Quite often, a person who is preoccupied with the purpose of a trip may be diverted by unclear or improper graphics—this then becomes a handicap. Elderly people who are healthy and have no handicap other than old age generally are not accustomed to the rapid moving pace normally found in an airport terminal. These factors must be considered when designing the barrier free airport, to make it easy for all people to move freely and efficiently from one point to another. Clear, easy-to-read directional signs and a simple transition from arrival to departure should be the designer's goal.

The airport authority at **Cleveland-Hopkins** was also farsighted enough to provide a children's nursery complete with a carefully trained staff to assist all users. If, in addition, the authority decides to provide recreation or amusement rooms containing pool, pinball, and

electronic games, the management must be prepared for the extensive maintenance these facilities require.

**Cleveland-Hopkins** is also noted for its artistic features. There are two outstanding sculptured wall coverings of deep pile carpeting. One is in the public use space of the baggage claim area and the other in a quiet sitting area known as the "Cleveland space." Both designs are by Michael Benjamin of the architect's staff.

Two soaring metal sculptures greet the public in the new terminal area. One is located in a fountain in the "Cleveland Space," and the other is a major focal point outside, on the upper level of the drive drop-off area.

When sculpture or fountains of this type are installed, it should be made clear what, if any, special maintenance requirements need to be followed. Terminal maintenance

personnel are not usually equipped or experienced in cleaning or maintaining pool filters and pumps. The water level must be checked frequently and kept free of debris. An outside maintenance contract may be considered. Special instructions should be obtained in advance from the artist or responsible craftsmen.

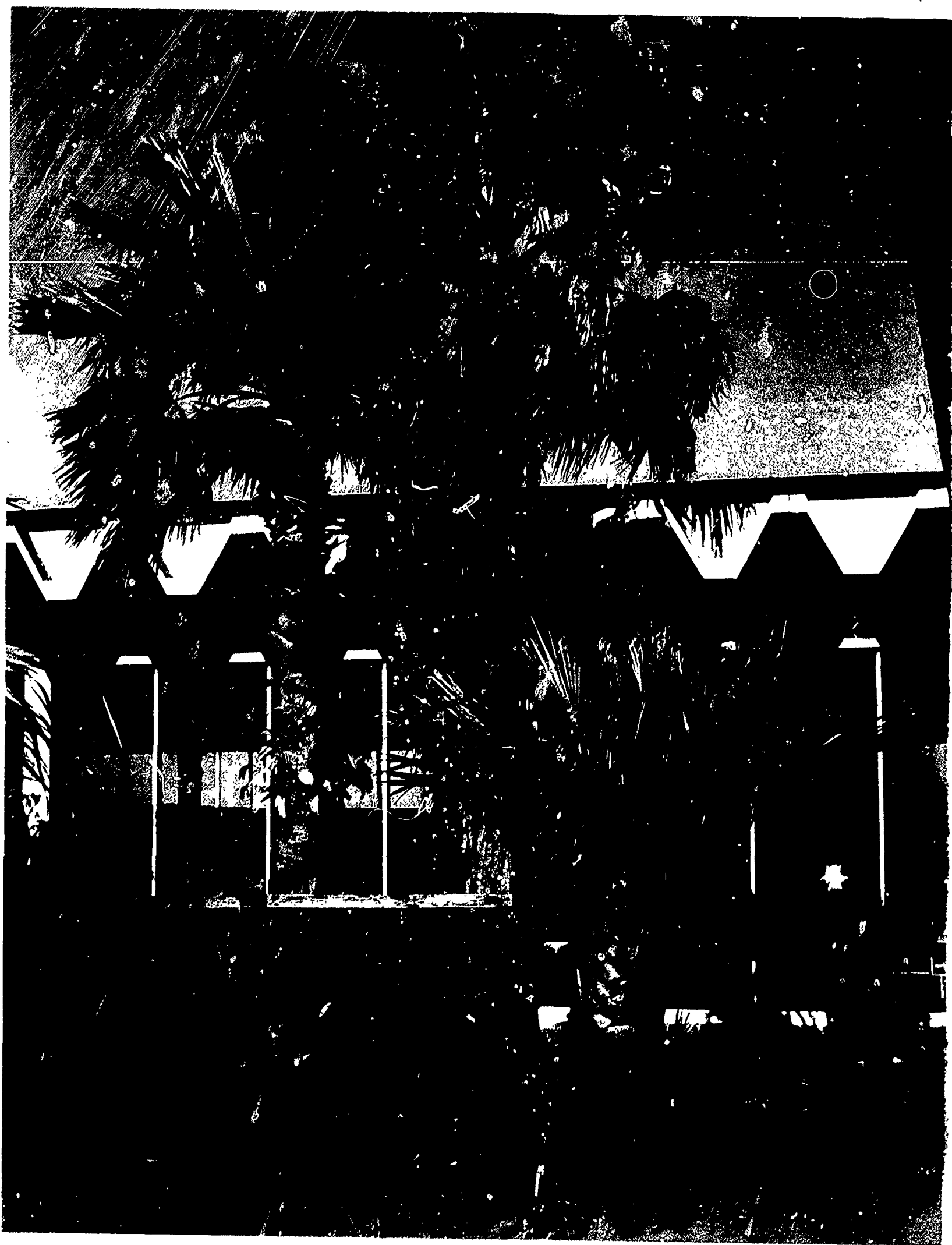
**Airport Contact:**  
CLEVELAND-HOPKINS  
International Airport  
Director of Port Control  
Cleveland, Ohio 44135

**Credits:**  
Richard L. Bowen &  
Associates, Inc., AIA  
13124 Shaker Square  
Cleveland, Ohio 44120  
Telephone: 216-491-9300

Sculptor: Clarence Van Duzer  
Mural: Michael Benjamin

**Features of Special Note:**  
Metal sculpture  
Mural  
Carpet detail  
Graphics





## Corpus Christi

The designers of **CORPUS CHRISTI** International Airport in Corpus Christi, Texas, had one primary objective: to build the most attractive facility possible within functional limitations. Here the sea of asphalt found at most airports is replaced by a sea of green grass and a few well-chosen trees. Lush tropical plants such as palm, banana, and philodendron are used both indoors and out. Wood and brick walls serve as backdrops to these well-maintained planted areas, screening off parking lots and baggage claim areas. Although extensive landscaping of this type may be difficult to achieve at larger airports serving a greater number of air carriers, the concept works well here.

The airport itself is located 7 miles from downtown on Highway 44. Several street systems provide direct access to industrial areas, residential sectors, and downtown Corpus Christi.

The airport terminal was constructed at a cost of approximately \$6.5 million, with participation by the FAA. It includes two buildings, that together contain a total of 70,000 square feet, connected by covered concourses.

The main terminal building contains the airline ticket concourse, restaurant, car rental offices, airline catering service, newsstand, gift shop, insurance and information counter, lobby, and lounges. The control tower and operations building is a five-story structure housing

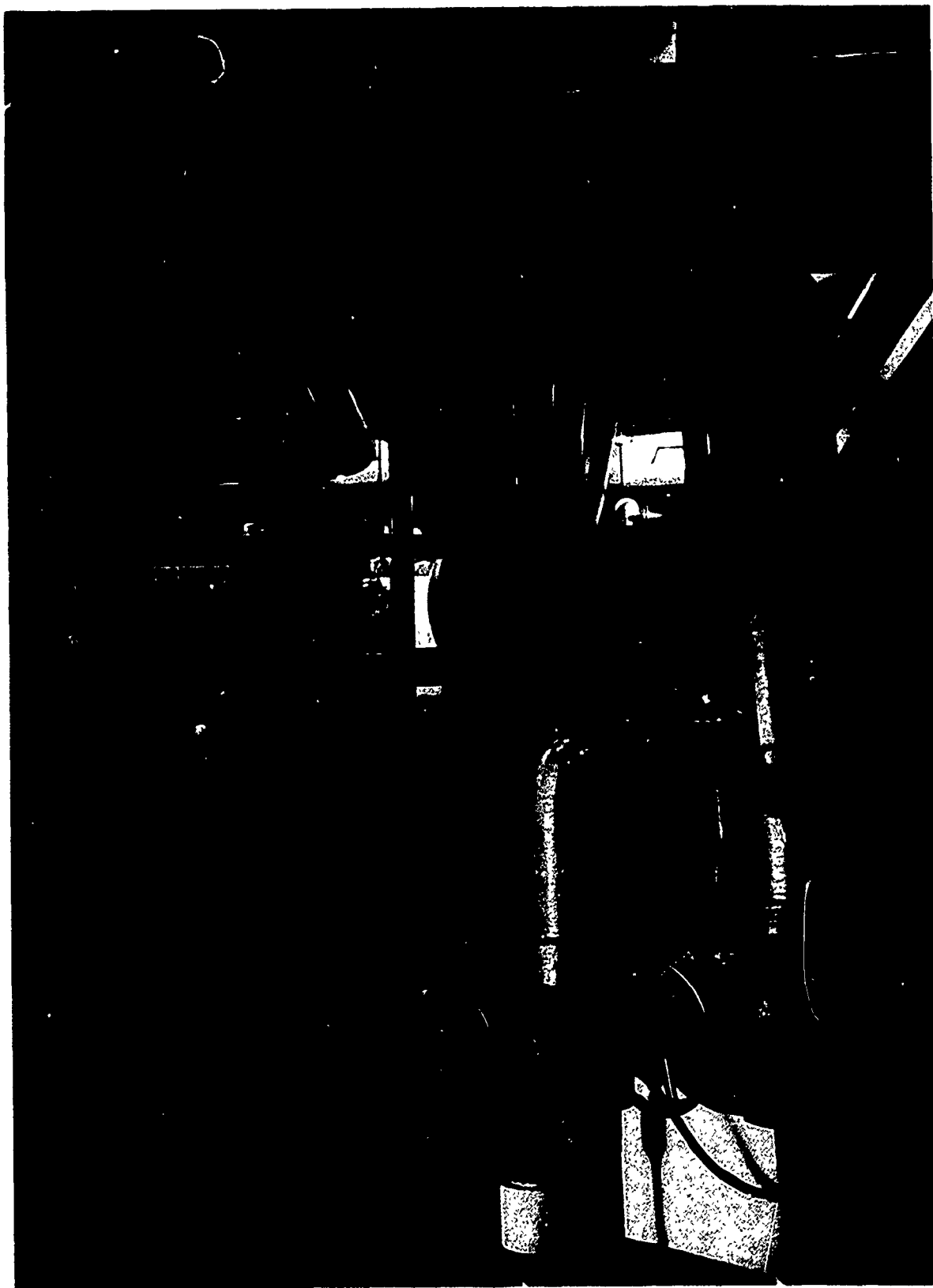
management offices, weather bureau, and the FAA. There are three passenger gate houses serving a total of six gate positions.

Passengers and their guests may enjoy the airport restaurant, which seats 150 and is built at an elevated level. Diners enjoy a splendid view of aircraft activities. A modern motel with swimming pool and dining room service is planned for construction on the airport property near the terminal building.

Even the roof construction at **Corpus Christi** creates an at-

tractive pattern. The roof girders in this airport clear a span of 63 feet. These spans are post-stressed "v" shaped with three steel cable bundles in each girder. (Under extensive testing, a sample girder was stressed to 22 times its design strength without breaking.) After the concrete was cured for two weeks, the steel tendons were stretched. Steel plates cast into the upper portion of the "v" girder were welded to adjacent girders to form the roof struc-



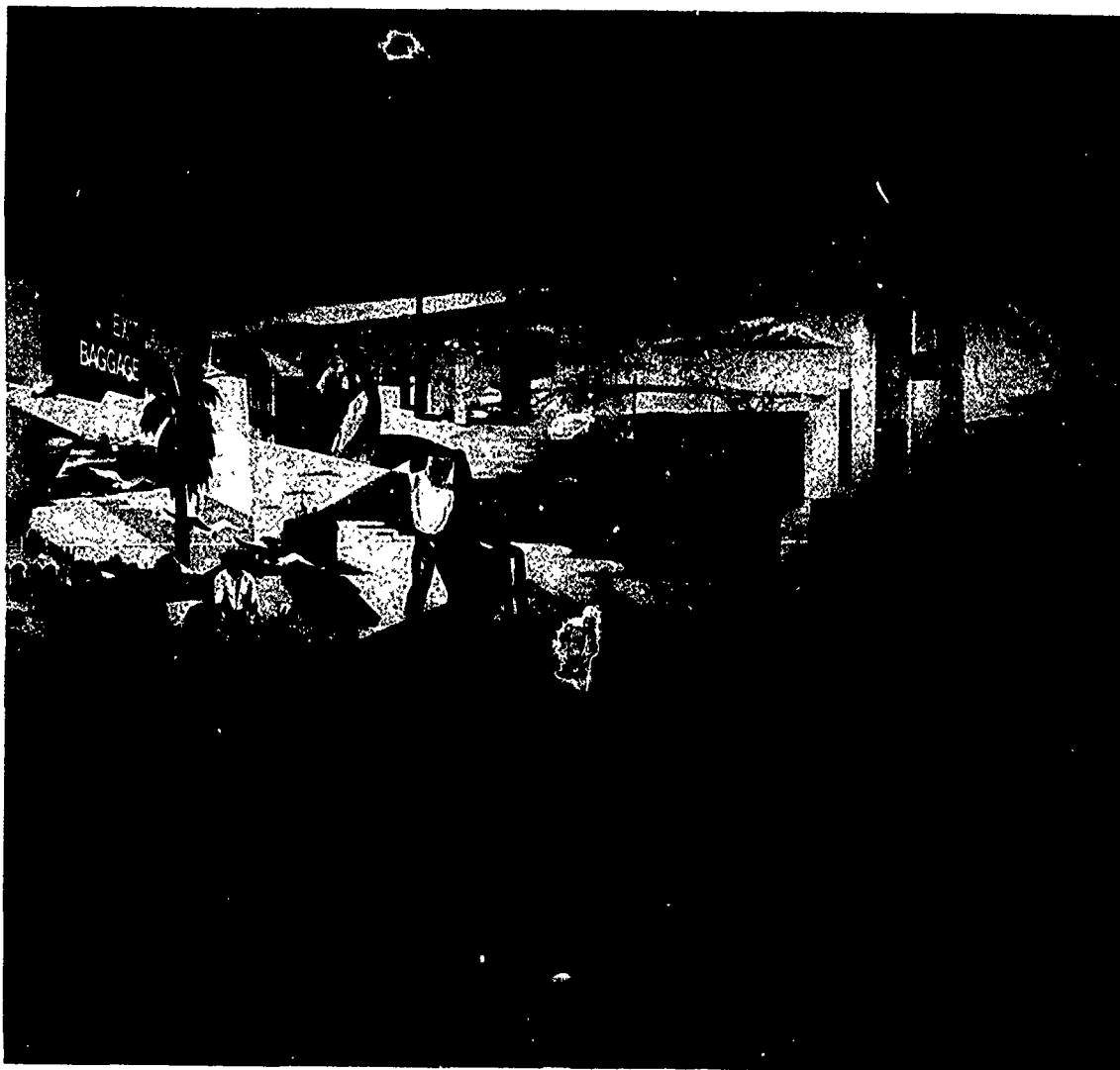


ture. Then waterproofing was applied. Acoustical plaster was sprayed  $\frac{3}{8}$ -inch thick on the interior surfaces.

The utility plants at this terminal are also well-maintained. The heating and cooling plant in particular is colorfully painted to help differentiate one type of system from another. Hot water pipes are red; cold water lines are blue; steam lines are yellow; gas pipes are painted black; etc. In addition to its functional use, this plant could almost be considered a work of art. A simple glass wall or viewing window at very little cost is being considered to make this colorful display visible to visitors.

Prior to the completion of **Corpus Christi**, the City Council commissioned a mural to serve as a major focal point in the public space of the terminal. About a year of development work was done by various artists before the Council accepted a sketch for a mural entitled "Circle in the Sun." This sketch was then approved by a committee consisting of the city manager, the airport manager, the city councilman, and a local attorney.

"Circle in the Sun" was chosen because it depicts the history of the Corpus Christi area, starting with the influence of Mexico and moving with light



and shadow across the face of the coastal bend. The entire theme for the mural comes from the sun and its effect on this part of the world. Using the techniques of modern realism, the mural is a dynamic composition dealing with luminous transitions of light. Varying horizontal lines are used to avoid distortion in perspective. Artists Dot Turner, Joan Allen, and Yvonne Yeager chose vibrant

colors ranging from intense yellow to cool sky blue.

This mural, in addition to the plants and other aesthetic amenities in the terminal, make the **Corpus Christi** International Airport a truly attractive place to visit.

**Airport Contact:**  
CORPUS CHRISTI  
International Airport  
Airport Manager  
Route 2, Box 902  
Corpus Christi, Texas 78410

**Credits:**

Current design:  
Cotten/Landreth, Architects  
Bank & Trust Tower No. 43  
Corpus Christi, Texas 78477  
Telephone: 512-884-3295

Landscape design: Durwood  
Thompson, Sr.

**Features of Special Note:**

Architecture  
Landscape/site plan  
Mural





## Dallas-Fort Worth

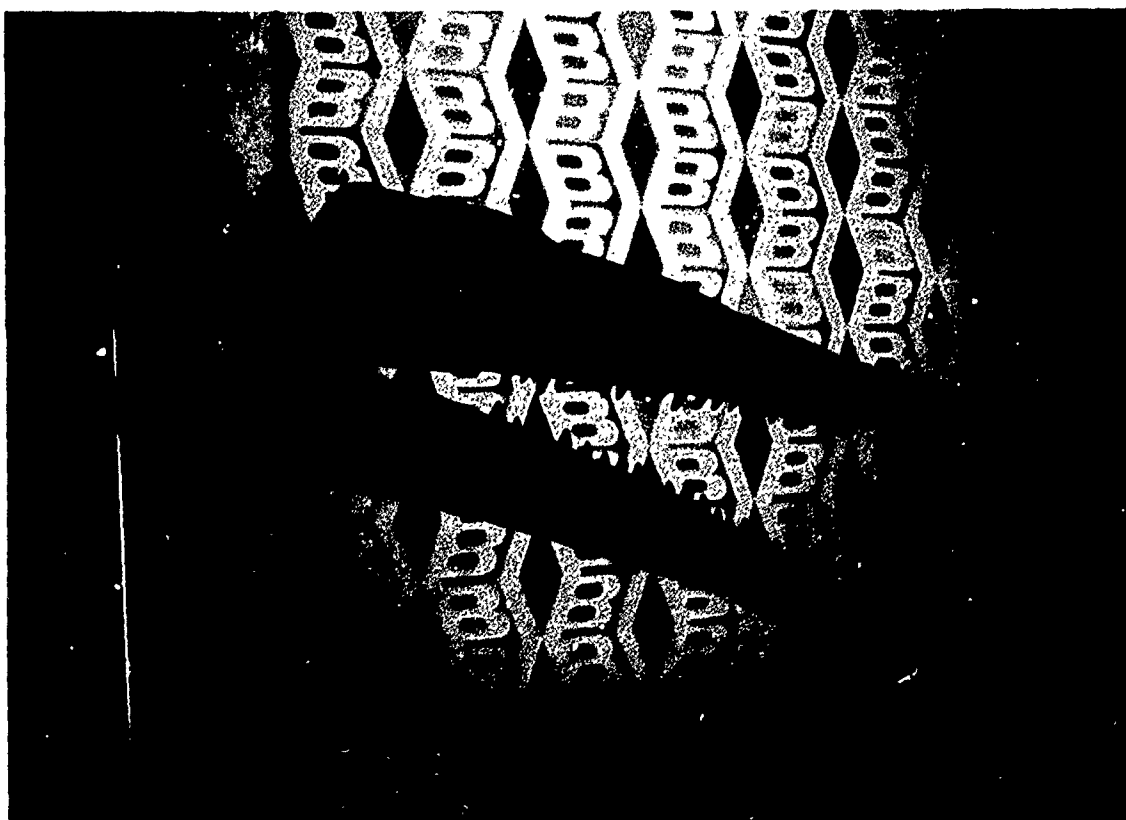
The **DALLAS-FORT WORTH** Airport clearly reflects the bigness of the state and the tendency for most things in Texas to be big; the airport covers 17,500 acres.

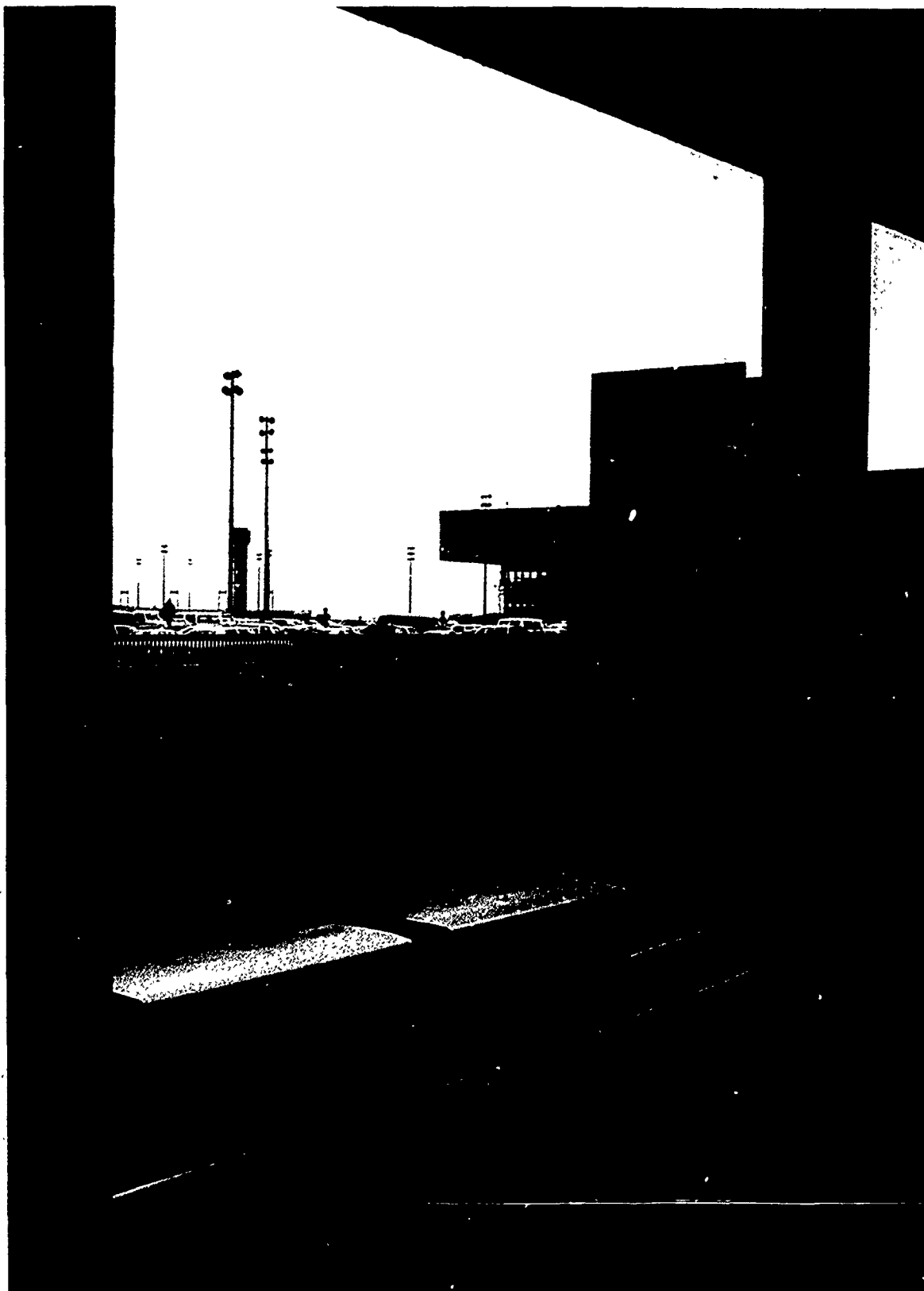
The airport was designed as a decentralized facility with an automatic transportation system to connect its airline terminals, parking lots, and other facilities. Airtrans is a completely automatic transit system, the first of its kind at any airport. Airtrans vehicles are electrically powered and run at a maximum speed of 17 MPH on puncture-proof rubber tires. The system operates on its own special roadway, or guideway, throughout the airport. There are two distinct types of vehicles: passenger units and open utility vehicles. Both operate automatically and without drivers, but an observer in a central control room monitors the system at all times.

All the signage at the airport, interior as well as exterior, is standardized using the helvetica style alphabet. Structural features are color-coordinated for a unified effect. Identification of airlines is on tall pylons; lettering is white on a brown background. Concrete is buff colored; exposed structural members are unpainted special weathering steel; hardware is bronze; window casings and trim are bronzed anodized aluminum; windows are bronze tinted.

The speed of automotive traffic was a determining factor not only in the design and placement of vegetation and site work, but also in the location of directional signs. Visual

comprehension varies with speed and is a critical factor in the access road design. It is interesting to note that all turn-offs on the airport spine road are to the left. The landscape design is intended to direct an individual to the destination and orient a person within a given area. Large sweeps of blue, yellow, and red wildflowers designed by artist Chapman Kelly have been incorporated along the access road in between the runways and taxiways. The flower beds are monitored carefully to assure that birds are not attracted in significant numbers. Large birds or flocks of birds can constitute a hazard to aircraft, and attracting them must be avoided.





The entire **Dallas-Ft. Worth** International Airport complex was designed as a gateway to the southwest region. Trees, shrubs, ground cover, grasses, earth forms, lighting systems, and graphics are incorporated into a strong unified design to relate all structures, roads, and bridges into a single environment. Consistent with the size of the airport, there are large masses of vegetation, strong earth forms, and broad areas of grass and wildflowers. Because of high speed traffic and the large scale and flatness of the site, wide, bold swatches of vegetation are used to provide a visible framework. Individual plantings or small groups of plantings are avoided. Continuity is achieved through a consistent, ordered use of plant materials avoiding abrupt, distracting changes from one material to another. Where earth forms are used, they appear as continuous, strong statements, occasionally several miles long. Deciduous trees throughout provide a seasonal change and add a subtle variety to the environment.

For color, the designers chose to use flowering trees rather than shrubs or annuals in prepared beds, since trees provide color at greater distances and are less costly to maintain. Flowering shrubs and flowers are used primarily in pedestrian areas and as plant-

ings adjacent to the terminals, hotels, office buildings, and support facilities. In these areas, they reflect the neat, clean, and straight-forward order of the architectural style and treatment. Evergreen trees and ground covers are used in sufficient quantity to insure an effective appearance in winter as well as summer.

Low maintenance at the entire airport complex and elsewhere is consistent with good design, since the most beautiful site can easily be ruined if maintenance becomes insurmountable or is not well done. This applies to lawn areas as well as to trees and shrubs.

Because of the acreage involved and because of high maintenance costs, lawn areas are kept simple, open, and easy to mow. Planting areas are edged and controlled to simplify trimming. Ground cover is specified on slopes of 2:1 or greater to avoid mowing problems and to stabilize the soil. Watering is done through an airport-wide mechanical system. Trees and shrubs free of or resistant to insects and diseases are specified. Cultivated flower beds requiring constant care are avoided, except in small areas where replaceable plants can be programmed and cared for easily.

Security walls and fencing match the adjacent buildings in material or color whenever possible. Where chain link fencing is used, it is coated with dark brown vinyl or screened with plantings. Maintenance is reduced by the use of a 12-inch wide concrete mowing strip at the base of the fence.



One unique feature is a display of a prehistoric dinosaur skeleton. This Plesiosaur swam the seas about 70 million years ago in the area where one of the terminals now stands. Lance Corely discovered fossil remains during preliminary excavation at the airport. Professor Bob H. Slaughter of the Shuler Museum of Paleontology of Southern Methodist University along with his graduate students Sara Dorsey, Bill Osten,

and Charles Blome excavated and prepared the remains for display. Braniff International Airlines provided funds for the excavation work so that residents and visitors to the area now have an opportunity to see firsthand this prehistoric reptile.

#### **Airport Contact:**

DALLAS-FORT WORTH  
INTERNATIONAL Airport  
Director of Planning &  
Engineering  
Telephone: 214-574-3132  
Manager of Planning/  
Engineering  
P.O. Box DFW  
Dallas-Ft. Worth Airport, Texas  
75261

Chief Planner  
Planner/Engineer  
Telephone: 214-574-3105

#### **Credits:**

HOK Associates, Inc.  
(Hellmuth, Obata, &  
Kassabaum)  
915 Olive Street  
St. Louis, Missouri 63101  
Telephone: 314-421-2010

Brodsky, Hopf & Adler  
Project Architects

Richard B. Myrick & Associates  
Landscape Architects

#### **Features of Special Note:**

Architecture  
Graphics  
Site planning and landscaping



## Detroit

The MICHAEL BERRY International terminal building at **DETROIT METROPOLITAN-WAYNE COUNTY** Airport takes on a sculptured look with its vertical concrete fins. The main building face is finished with ribbed split face block. Outside walks are of exposed washed aggregate. The public entrance to the terminal has a 400-foot long concrete canopy supported by 23 unique sculptured columns. Styrofoam shapes were used in the forms; they were concrete poured and then sandblasted. Escalators rise from the main entrance area directly to the third level departure lounge, exiting past a wall faced with murals made of copper.

Basic to the terminal design is the separation of departing passengers from arriving passengers. Carpets were specially designed and laid in such a way as to visually direct and aid the traveler. The first level is divided so that the north half is dedicated to the departing passengers and the south half to the arriving passengers. This level also houses ticket and lobby, and baggage claim, as well as customs inspection. The second level contains immigration, public health inspection, and airline offices. The third level is devoted to the departure lounge, restaurant, bar, and concessions.

A unique operational feature is a two-level concourse of exposed reinforced concrete construction serving each of the three arrival-departure flight stations. Steel trusses are enclosed in a U-shape of resinous concrete  $\frac{7}{8}$ -inch thick. The con-

crete has a rough board form texture sprayed with a fire-retardant to meet local fire marshal codes. The upper level, adjacent to the departure lounge, allows passengers ready access to aircraft; the lower level acts as an isolation concourse, achieved by a series of remotely controlled doors which can be electronically opened or closed. These concourses not only maintain the isolation of incoming passengers, but provide a substantially shorter travel distance from terminal to aircraft than is usually encountered in airline terminals.

Because deplaning passengers are not always sure at which airport they have arrived, the designers of the new **Detroit** International terminal had large "Welcome to Detroit" signs added to their corridors. This simple consideration assures the traveler that he has arrived at the right place. The supergraphics used are bright, colorful, easily installed, and inexpensive.



### **Airport Contact:**

**DETROIT METROPOLITAN-WAYNE COUNTY** Airport  
Detroit Metropolitan-Wayne County Road Commission  
Leroy C. Smith Terminal  
Detroit, Michigan 48242  
Telephone: 313-278-3910

Project Director

Managing Director, Airport Manager

Director of Transportation

### **Credits:**

Louis G. Redstone Associates, Inc., AIA

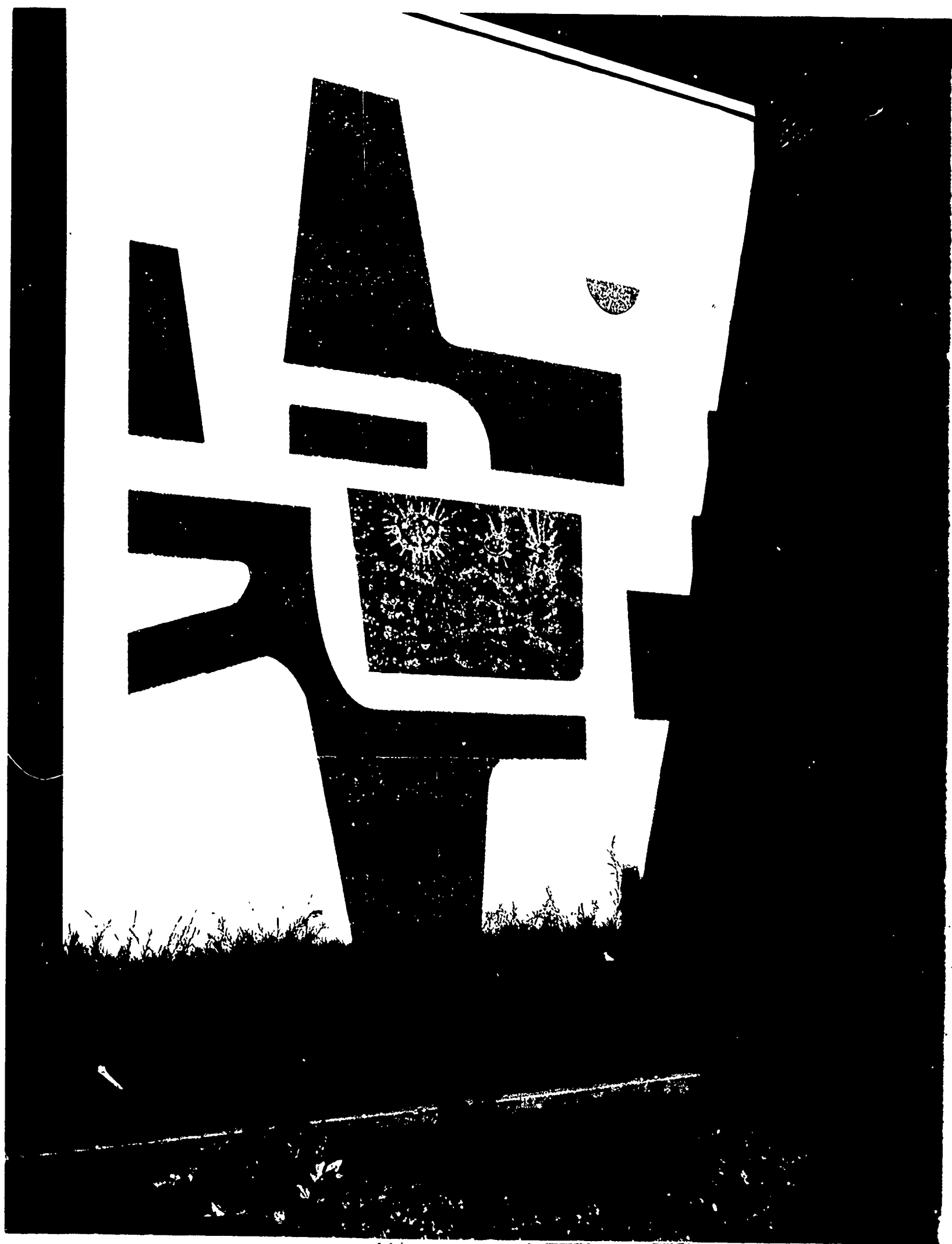
Architecture/Engineering/  
Planner/Interior Design  
28425 West Eight Mile Road  
Livonia, Michigan 48152  
Telephone: 303-476-6620

Concrete sculpture: Robert Youngman

Copper mural: Narendra Patel  
Interior design: Sivers Inc.

### **Features of Special Note:**

Sculpture  
Supergraphics  
Carpeting



## Fresno

The **FRESNO** Airport terminal was built and dedicated in 1962. During the initial terminal building project and as part of the recent renovation program, every effort was made to reduce confusion to the traveler by establishing strict controls over all concessionaires and lease spaces. This includes standardizing letter styles and sizes for all airline ticket areas. Corporate symbols are restricted to an area behind the ticket counter and gate check-in desks. These spaces are well-lighted and uniform to achieve a unity of design space throughout the terminal. The interior lobby space is designed to accommodate hanging sculpture, although as yet none has been obtained.

Furnishings are kept simple to reduce clutter, confusion, and maintenance. Trash receptacles of exposed aggregate are unobtrusive, yet strong enough to withstand an explosive charge.

The new concourse and gate positions are simple, well-designed, and colorfully carpeted. Carpeting in bright bands runs from the ceiling down one wall across the floor and up the other wall. New signs and symbols have been installed. Those signs in the older portion of the terminal are being replaced to establish a continuity and simplicity of design throughout.

The architects for the terminal expansion have also built in energy saving devices such as automatic louvered sun screens located in the clerestory windows above the gate positions. In addition, vertical blinds can be either manually operated or

automatically controlled to block out the hot sun or reflected heat from the adjacent pavement. The blinds are colorful and complement the interior design scheme.

Two of the exterior walls display a striking tile mosaic of abstract design. Outside, curb breaks are painted blue so they can be spotted quickly for easy access.

The areas between the runway and taxiways at **Fresno** are cultivated and planted with

crops, including cotton, peanuts, and grain. These plantings come within a few feet of the paved surfaces. Birds, crop dusting, cultivating, and harvesting operations are carefully monitored and have not caused any disruption to normal airport operations. This kind of use is not generally recommended and must be carefully and constantly monitored to prevent birds becoming a hazard to aircraft operations.

### **Airport Contact:**

**FRESNO** Air Terminal  
Airport Manager  
Government Agency Building,  
Suite 3  
Fresno, California 93727

Tower Chief  
Telephone: 209-467-5405

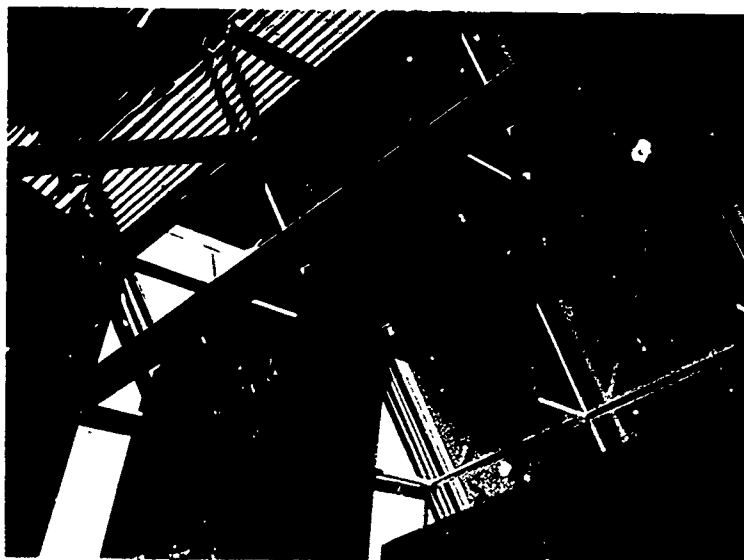
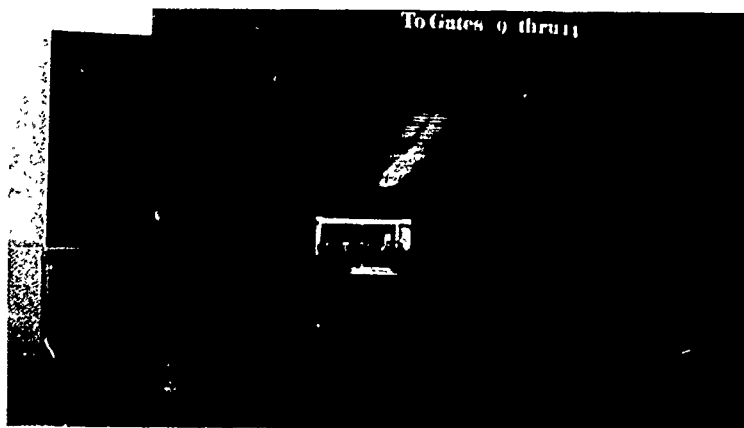
### **Credits:**

Allen Y. Lew & William  
Patnaude, Inc., AIA  
2014 Tulare Street  
Fresno, California 93721  
Telephone: 209-268-7451

Mosaic: Raymond Rice, San  
Francisco

### **Features of Special Note:**

Mosaic tile work  
Carpeting





Airport  
Exit



## Houston

The new terminal facilities at **HOUSTON INTERCONTINENTAL** Airport greet the person arriving by land or air. A cylindrical structure serves as a focal point and stands on a pedestal over the hotel meeting rooms. This structure is the center point in a row of four terminals; two are complete and one is under construction. The entire facility is design-coordinated. Graphic interior and exterior signage is color-keyed for quick reference by travelers arriving at the airport.

Parking is provided on top of the terminal buildings as well as between each terminal. The traveler has access to a subway train that connects all terminals to the hotel. The subway will eventually be extended to a total of about 5,000 feet to connect all four terminals. This subway will simplify and expedite the transfer of passengers from one airline to another.

Throughout the planning stages for **Houston Intercontinental**, designers and consultants drew on the experiences of many aviation-related, governmental, and industry agencies as well as other airports. Design conferences were held with major airlines serving the area, aircraft manufacturers, the Houston Chamber of Commerce Aviation Committee, concessionaires, and many others. Valuable suggestions obtained from these sources contributed to the design of the facilities constructed.



A number of innovations are incorporated in the overall terminal concept, with primary consideration being given to the comfort and convenience of passengers:

1. Passengers wanting to leave their automobile have three choices: (a) self-parking in a garage immediately over the desired ticket counter in the terminal building, (b) attendant parking directly opposite the ticket counter, at slightly higher rates, or (c) open parking south of each ticket terminal building at the lowest parking rate.

2. Compact and convenient terminal buildings—each with all facilities in one area—are capable of expansion both horizontally and vertically.

3. Enplaning and deplaning passengers can either ride a mechanical conveyance (moving sidewalk) or walk in air-conditioned comfort through the pier between the gate position and the terminal.

4. Adequate space is provided for speedy and efficient baggage handling.

In addition, vehicular flow is centralized to increase the efficiency of ground transportation. Traffic lanes are differentiated to separate buses and limousines from private vehicles. Roadways at the apron level separate service vehicles such as baggage trains, catering trucks, and maintenance equipment to reduce airport congestion.

The piers, connecting the terminal areas and gate positions, contain many features such as underground and utility tunnels which improve the convenience and safety of maintenance and operations. Adequate room is available for individual airlines to add offices, waiting rooms, and loading devices as desired.

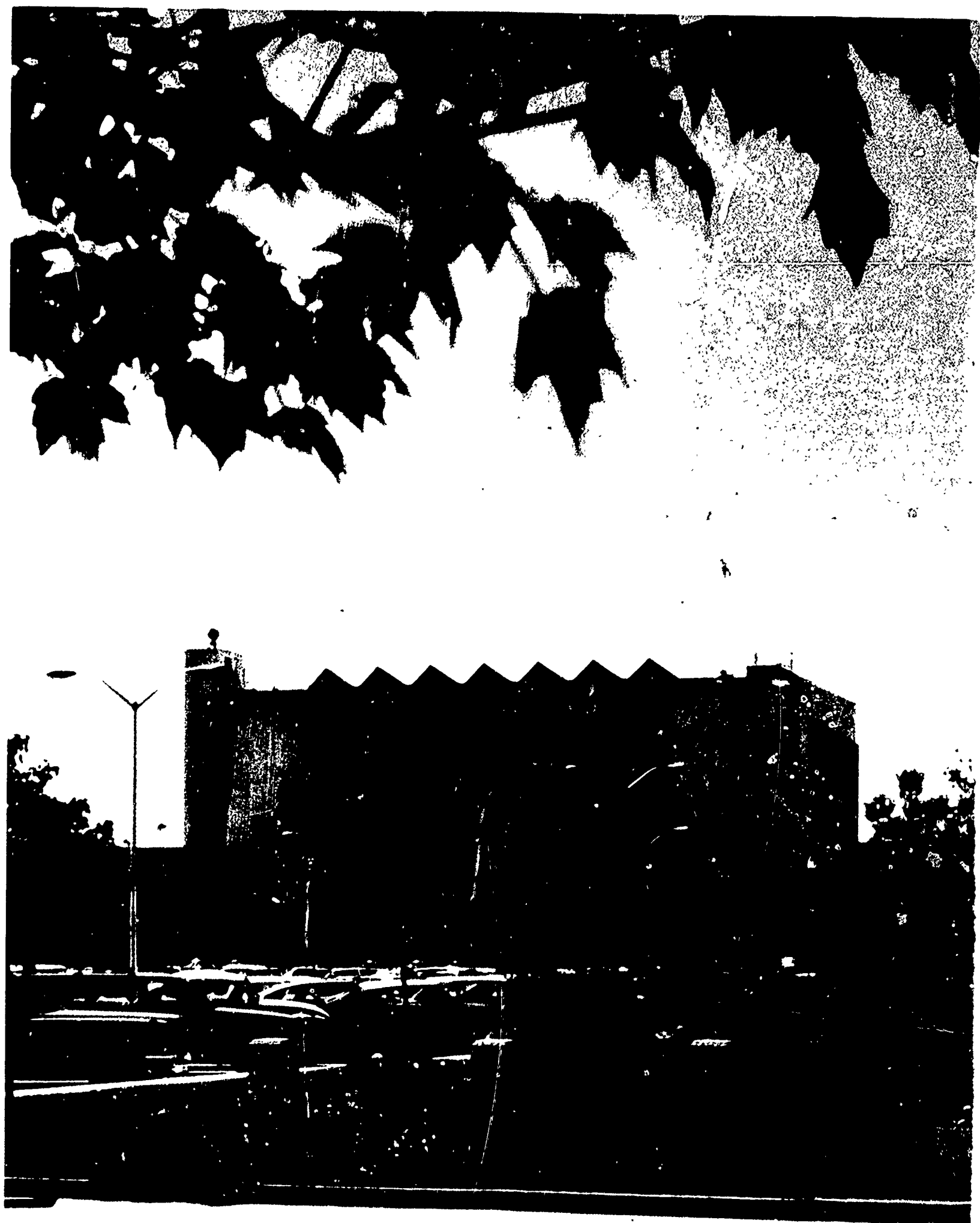
### **Airport Contact:**

**HOUSTON Intercontinental Airport**  
(Terminal A)  
Director  
Assistant Manager  
P. O. Box 60106  
Houston, Texas 77060  
Telephone: 713-443-4944

### **Credits:**

Goldman and Rolfe  
5100 Travis  
Houston, Texas 77002  
Telephone: 713-529-3681  
(joint venture architects with)  
Pierce-Goodwin-Alexander  
2217 Welch  
Houston, Texas 77019

**Features of Special Note:**  
Architecture



## Indianapolis

At **INDIANAPOLIS** International Airport management has recognized the value of a well-developed, equipped, and staffed maintenance and beautification program. Their efforts provide millions of passengers yearly with a pleasant visual impression of the Indianapolis area and serve to protect the community's investment in the airport. The beautification program received national attention in 1976 when it received a DOT/FAA "Airport Beautification Award."

The new two-level terminal is festive, attractive, convenient for the public, and designed for easy expansion. The main building has a folded plate roof which is repeated in the concourses. Exposed white crushed gravel finish is used extensively in the exterior treatment of the terminal.

Two attention getting supergraphics have been recently added to the public spaces of the terminal. Both have an aviation motif and are designed to direct the pedestrian to either baggage claim or gate positions. The one near the baggage pick-up area depicts the skyline of **Indianapolis** with aircraft overhead. The second supergraphic shows a large aircraft landing and is located at the entry to the newest gate position concourse. Both are brightly painted, bringing a splash of vitality to the terminal.

The landscape and site design work done at the **Indian-**

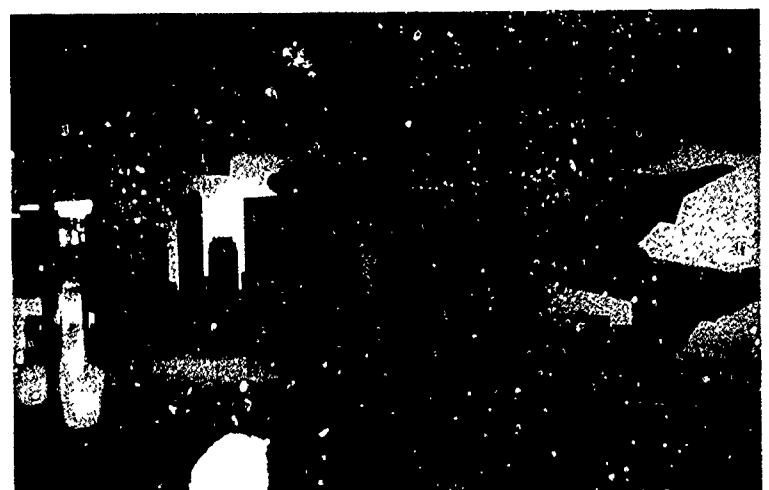
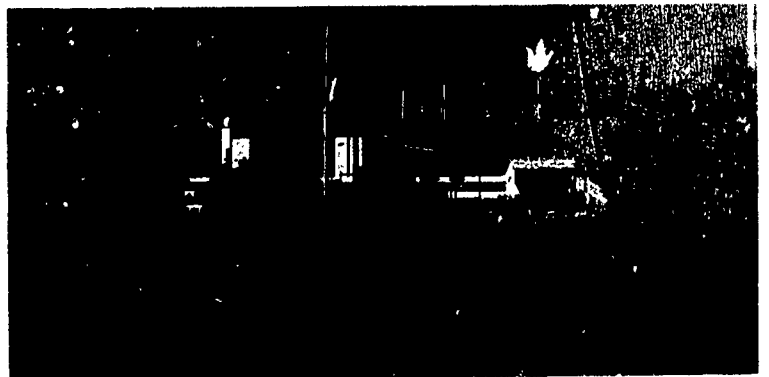
**apolis** International terminal is commendable. Effective use is made of earth berms combined with well-chosen landscape materials. Here, as at many airports, access roads have become a maze of turnoff ramps, so the designers were careful to screen off parking lots that could distract the driver unfamiliar with the airport. Signs are large and simple with clear messages. Evergreens or other plantings help block out distractions and actually accent directional signs.

The parking lot is well-planted with trees to soften the concrete expanse of the complex. Shrubs, ground cover and beds of flowers are functionally used and contribute to the aesthetic appearance of the terminal area. Outdoor benches,



trash receptacles, and exterior lighting have been well-placed to blend with the architectural design of the terminal. A group of flag poles display flags of the U.S., the State of Indiana and each of the airlines that serves the airport. It is a focal point for travelers approaching the airport on the main access road.

These landscaped areas are exceptionally well-maintained. The National Association of Grounds Maintenance has recently bestowed a highly coveted award on the Indianapolis Airport Authority for its outstanding effort in landscaping and grounds maintenance.



### **Airport Contact:**

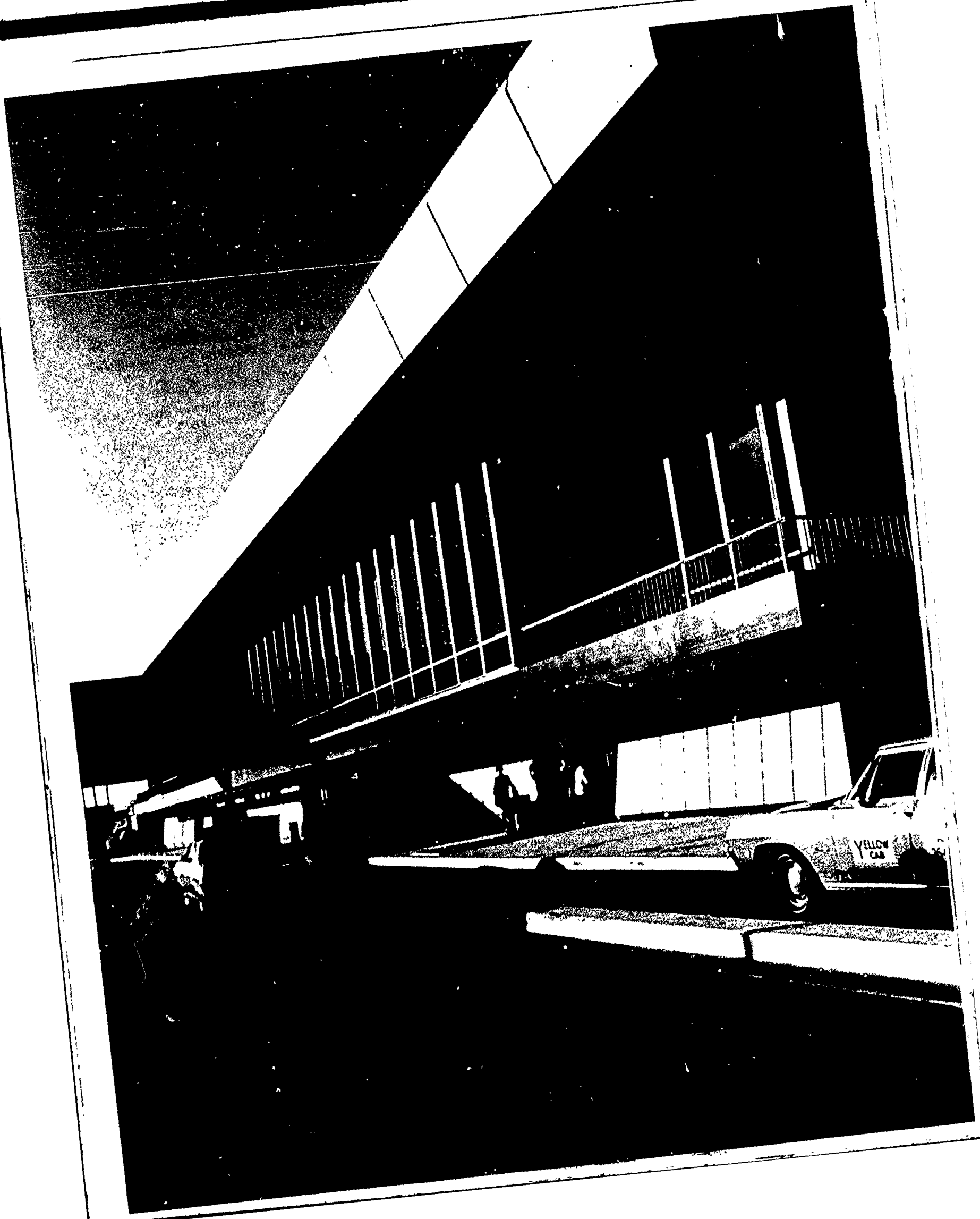
**INDIANAPOLIS** International  
Airport  
Executive Director  
Airport Planner/Project  
Development  
Indianapolis, Indiana 46241  
Telephone: 317-247-6271

### **Credits:**

Everett I. Brown, Architects &  
Engineers  
5500 W. Bradbury Avenue  
Indianapolis, Indiana 46241

### **Features of Special Note:**

Architecture  
Landscape site plan



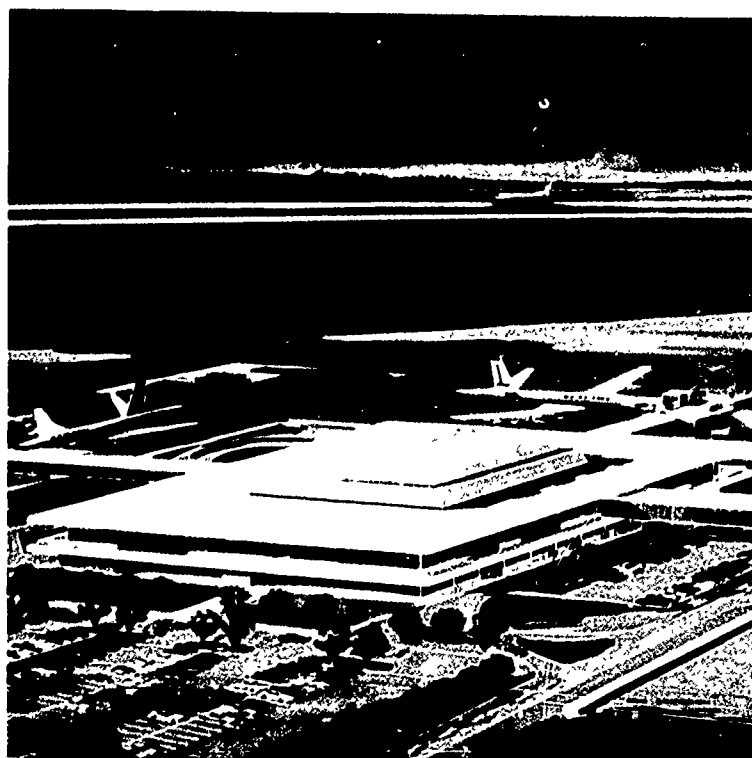
## Jacksonville

The **JACKSONVILLE**, Florida, Airport terminal was completed in 1968. This functional and beautifully equipped facility is particularly notable for being built within its estimated costs and planned completion date.

The design is a deceptively simple and effective square two-story terminal building partly recessed below apron level with three concourses jutting from it. Arriving and departing passengers are separated on opposite sides of the building. Both have curbside access to ticketing or baggage claim areas. Bisecting the first floor facilities is an apron service driveway that serves both sides.

The second floor houses concessions, bar and restaurant facilities, airport management offices, and a lobby and entry way to the concourses. Six hundred feet is the maximum walking distance from the center of the lobby to the end of any concourse.

On the exterior, precast stone panels are used at ground level with smokey-tinted



expanses of glass above that. Trim is coquina aggregate. (Coquina is a shell indigenous to the Florida shoreline.)

Inside, practical earth colors dominate the ground floor, while the second level color scheme changes to "fly away blue" and black. Blue walls, accented with black doors, rise about 20 feet from floor level and give way to native cypress wood panels. A series of huge inverted domes in the high ceiling shower diffused light over the entire lobby.

Another feature is the carpeting, noted for its noise absorbing qualities, which covers every visible square foot of the terminal including the concourses. It has almost totally eliminated falls and injuries

from slipping, which were previously common on the covered-over terazzo floors. A mottled blue and black patterned carpet is used on the upper level while "back to earth brown" is used on the ground floor. Normally, careless smokers seem intimidated by carpeted areas, and their good instincts are encouraged by adequate numbers of conspicuously placed ashtrays. Maintenance costs have been reduced as a result, and the carpet was recently replaced after 10 years of hard use.

**Airport Contact:**  
**JACKSONVILLE** International  
 Airport  
 Director of Operations  
 P. O. Box 18097  
 Jacksonville, Florida 32229  
 Telephone: 904-757-2265

**Credits:**  
 Reynolds, Smith & Hills, AIA  
 Architects, Engineers &  
 Planners  
 4019 Boulevard Center Drive  
 P. O. Box 4850  
 Jacksonville, Florida 32201  
 Telephone: 904-396-2011

**Features of Special Note:**  
 Architecture

*"For me, aviation has value only to the extent that it contributes to the quality of the human life it serves."*

Charles A. Lindbergh, July 1972



## John F. Kennedy

New York City's **JOHN F. KENNEDY INTERNATIONAL** (JFK) terminal is a principal gateway into the United States from other countries. Literally millions of people see America for the first time as they pass through this airport.

Because of this terminal's high visibility, the Port Authority has allocated one percent of building costs to the acquisition and installation of works of art.

Although early design of the terminal included an arts program, it was considered best to set up a "Committee on the Arts." This board is made up of seven people: the director of the Museum of Albright Knox, the curator of the Museum of Modern Art in New York City, the president of the Newark Museum, the vice chairman of the Port Authority of New York and New Jersey (PONYNJ), director of PONYNJ, a lay commissioner, and the project architect. This committee is responsible for administration of the arts program, and the review, selection, and placement of works of art.

Two hundred fifty thousand dollars was originally budgeted; \$226,000 was spent. This cost includes the acquisition and installation of 200 pieces: paintings, prints, sculpture, tapestry, and photographic displays. Many of the works are by American artists.

Tapestries by big name artists are considered by the committee to be the best buy or of "larger target value". People seem to appreciate tapestries more than paintings because they admire the basic weaving technique combined with the

contemporary design.

Passengers arriving in the U.S. move through baggage claims, customs, and then out to ground transportation. Little time is spent waiting; therefore, large lounge areas are not needed. Consequently, decorative arts are not considered as important in these areas as in those spaces where people departing the U.S. may pass through. Since a person departing on an overseas flight is required to arrive at least 1 hour before departure, the majority of displays are primarily oriented to the departing traveler. Once the traveler has been ticketed and baggage is checked, there is little to do but wander about—usually not far from the location of the carrier. Officials expect even more people waiting as airlines offer more standby fares. These pas-

sengers are foreigners for the most part, and this is an important factor which is considered when choosing specific works of art.

A reproduction of the "Wright Flyer" hangs in the public atrium of the International ter-

minal. This piece was constructed by a local vocational school and purchased by the Port Authority for \$15,000. Flags of countries served by JFK are mounted on the balcony rail surrounding the pusher aircraft.







The major U.S. domestic airlines at **JFK** either have their own terminal facilities or lease space from the principal owner. The American Airlines terminal facade is attractively done in colored glass, giving a contemporary stained glass appearance of huge dimensions and was designed by a Mexican artist. Inside the terminal are two large murals by Carybe. These are entitled "Discovery of the West" and "Rejoicing and Festival of the Americas." The TWA terminal, an outstanding art form in itself, was designed by Eero Saarinen and Associates. The Pan Am terminal, another notably designed structure, greets the traveler with a 200-foot curved wall which incorporates cast bronze figures.

All works of art at the **JFK** Airport international terminal have received very good response and high acceptance from the public. The Authority has, on occasion, allowed some pieces to be put out on loan or made available as part of a traveling art exhibit. The only vandalism has been the theft of two paintings that were cut from their frames. These had been displayed in a maximum security area near customs, but did not have protective display cases or enclosures.

Proper maintenance of works of art must be considered as part of the design. Tapestries are sprayed with anti-static material and are protected by plexiglass covers or cases. Air vents are placed so as to prevent anyone from vandalizing the works with spray paint. Paintings, prints, and large pho-

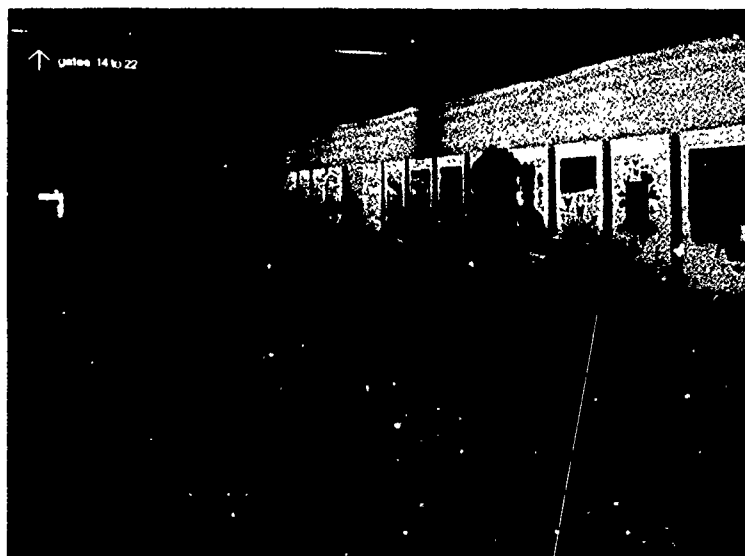
tos are also protected with plastic cases. Tapestries are cleaned (vacuumed) every six months. Care is taken because careless maintenance can cause wear. Plexiglass cases can be permanently defaced if the wrong cleaning materials are used or if they are improperly placed where they can be easily run into by vehicles or carts.

Experience indicates that sculpture with polished surfaces must either be protected or receive considerable maintenance. Usually the artist can describe the surface finish in advance and recommend the steps that must be followed to retain the original finish. Occasionally refurbishing of some works of art will be required; therefore, data from the artist should be obtained at the time

of acquisition and kept on file.

The Airport Authority and maintenance staff at JFK have had trouble with a large open fountain area in front of the

chapels. This area was recently closed because it was determined to be attractive to birds, particularly sea gulls. Unfortunately, the closing of the foun-



tain has significantly reduced the aesthetic appeal of this area. Extensive studies and evaluation of how to mitigate the bird attraction problem have been done. Regrettably, numerous trees have been cut to reduce roosting sites for blackbirds and starlings. During one study, it was discovered that many gulls and other birds were attracted by workers casting off lunch debris in the vicinity of the aircraft aprons. Consequently, the Airport Authority has discouraged this activity. Studies and monitoring continue.

#### **Airport Contact:**

**John F. Kennedy** International Airport  
Administrator  
Architectural Services  
Port Authority of New York and New Jersey  
No. 1 World Trade Center  
New York, New York 10048

#### **Credits:**

Mr. Saul Wengrat, PONYNJ  
JFK International Terminal

Various artists have created  
200 works of art, including:

- sculpture
- paintings
- printings
- photography
- tapestries

#### **Features of Special Note:**

Works of art



## Las Vegas

To the arriving or departing passenger, the **McCARRAN** Airport terminal in Las Vegas is distinctive not only in sight but in sound. Clusters of slot machines accompanied by the unique sound of levers being pulled and coins dropping into trays set this terminal apart from many others. The slot machines produce revenue for the Airport Authority. Outside, numerous billboards with colorful flashing lights beckon arriving passengers to the city.

Moving sidewalks in the **McCarran** terminal, approximately 750 feet long, carry passengers from one end of the building to the other. The moving sidewalks are equipped with unique taped recordings by popular entertainment personalities that instruct riders on how to use the moving walks.

Outside, the designers are experimenting with a new application of light brown gravel bonded with clear material in an effort to hide cracked, spawled concrete sidewalks. The material is attractive and offers good foot traction.

Inside, locator maps are strategically placed to help the traveler get oriented. Auto rental agencies use colorful banners for identification.

Shadows cast by architectural features add interest to the interior spaces. The interior walls of the international terminal have huge aviation motif murals and brightly painted utility ducts. Mirrored glass is used

to reduce air conditioning requirements.

The Airport Authority has prohibited the hand out or distribution of folders, pamphlets, or brochures to cut down on trash and clutter. Elbow height ashtrays several feet long are well-placed to reduce carpet burns and maintenance costs.

### **Airport Contact:**

**McCARRAN International Airport**  
Director of Aviation  
Community Relations Director  
5757 Airport Drive  
P.O. Box 11005  
Las Vegas, Nevada 89111  
Telephone: 702-739-5211

### **Credits:**

Welton Becket & Associates  
Architects (main terminal)  
10000 Santa Monica Boulevard  
Los Angeles, California 90067  
Telephone: 213-533-0555

### **Features of Special Note:**

Supergraphics  
Moving sidewalks  
Interior design



Las Vegas Airport Authority





## Lincoln

The LINCOLN Municipal Airport terminal complex in Lincoln, Nebraska, is uniquely designed to give passengers the shortest possible distance from auto to airplane. Its ultramodern angular configuration of weathering steel, glass, and face brick also allows for uncomplicated expansion.

The complex is a dramatic architectural addition to the Lincoln Airport—with highly visible facilities, sound functional planning, centrally located public services, and a bright, pleasant decor.

Its steel frame construction is spanned by precast concrete T sections and clad in weathering steel and brick. A sloping roof rises above the second level to provide clerestory lighting for the lobby.

The terminal's interior finishes, chosen for their economic and durable qualities, include slatted aluminum ceilings and exposed brick paved floors. The brick floors are attractive and intentionally have not been given a seal protection coat. Care is used, however, in selecting cleaning compounds. Carpeting is found only on the second level where no rain or snow can be tracked in. Carpeting also reduces noise on this level, where ceiling heights are lower. The interior is enriched with color and pendant-type area lighting, and graphics direct passengers to public amenities.

The designer gave careful attention to the arrangement and relationship of internal concession, office and public spaces and service areas. The airlines' architects were consulted early

in the planning process to ensure that both short-term and long-term needs would be met.

Car rental counters are located in the open spaces of the lower level, near the baggage claim area. While most airports place these counters back against the wall, they are used here as functional focal points located out in the open area of the lobby.

In the large overhead open space at the east end of the terminal, an antique bi-plane is on display. This "Arrow Sport Plane" was originally built in Havelock, Nebraska, in 1929. The "Friends of Lincoln Aviation History" group bought, restored, and donated the bright red vintage aircraft to the Nebraska State Historical Society Foundation for display in the new terminal. Another antique aircraft of local interest is to be acquired and displayed in a similar space at the opposite end of the terminal.

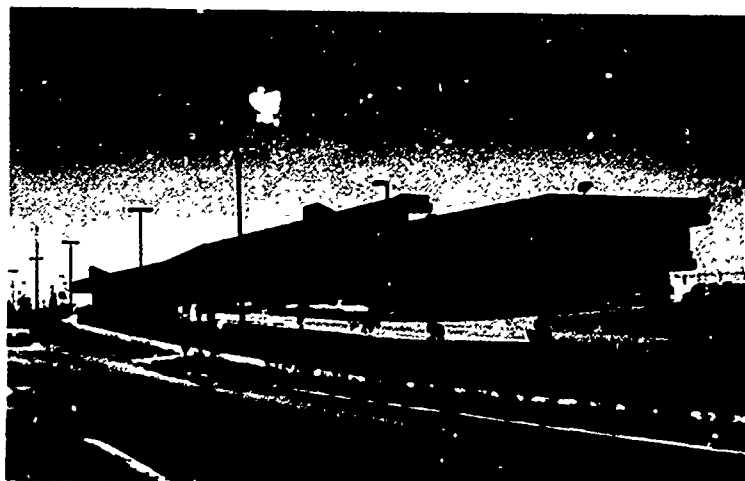
Another outstanding feature of the Lincoln terminal is the public address system. Unlike the garbled P.A. system found in many public places which confuse more often than inform, Lincoln's unit is carefully designed to produce clear and audible messages. In fact, the terminal acoustics are good in general. Security also has a unique tie-in to the P.A. unit. A special alert system helps reduce the number of officers required, provides quick response, and eliminates certain unnecessary costs.

Other noteworthy aspects of the complex include special exterior lighting, signage, and carefully planned landscaping.

When mature, these plantings will provide beauty as well as some protection from the prevailing winds.

Access road signage is interesting, as it is effectively mounted at eye level to increase readability. This allows more direct headlight reflection. The signs are not otherwise illuminated, yet the large white letters are very legible on a dark blue background. Sign placement is also very important. Authorities at the airport coordinated sign placement with the placement of electric systems for street lighting. This insures that light standards are not placed in front of signs as so often happens.

The Airport Authority recognizes that good design must be properly maintained. A grounds staff of only two people maintains the close-in landscaping. These people are supervised by the overall airport maintenance division. The cleaning of carpets, walks, windows, restrooms, and general maintenance of the building are done under contract.



**Airport Contact:**  
LINCOLN Municipal Airport  
Executive Director  
Airport Authority  
Lincoln, Nebraska 68501  
Telephone: 402-435-2925

**Credits:**  
Davis, Clark & Associates  
Architects, Engineers  
226 Stuard Building  
Lincoln, Nebraska 68508  
Telephone: 402-435-3502

Ralph Burke Associates  
Airport Consultants  
1550 Northwest Highway,  
Suite 400  
Park Ridge, Illinois 60068

**Features of Special Note:**  
Architecture



## Miami

The **Miami** International Airport is noted for its extensive, well-planned, and functionally oriented landscaping. The landscaping recommended by the Design Critique Committee of the Dade County Aviation Department, is designed to act as a buffer to reduce engine air currents and noise and to help filter and clean the air.

The project has resulted in substantial economic and aesthetic gains. Visitors arriving and departing the **Miami** International Airport are impressed with the tropical setting. These impressions are an important factor in an area largely dependent upon tourism. Management has noticed that the plantings have improved the health and efficiency of airport employees, especially those who work with rental cars, grounds maintenance, and parking facilities. Work attendance has improved and there has been a reduction of job vacancies, attributed to the improved work environment.

Along the access road, plantings are specified to screen, accent, or direct traffic flow. Low shrub masses and occasional shrubby trees are used to reduce headlight glare from oncoming traffic, prevent u turns, and serve as impact material for automobiles accidentally leaving the roadway. Double rows of trees of different heights screen out unsightly areas bordering the parkway. This screening also creates a unifying effect and allows drivers to see directional signs more clearly. Accent plants are used in conjunction with signing areas to draw attention to indi-

vidual signs and to help screen out background clutter.

The landscape designers had to consider vehicular speeds from 10 to 55 miles per hour. Therefore, visual screens and accents used in high speed traffic areas are quite large in contrast to accents in slower traffic areas or pedestrian areas which require greater detail. Drivers entering or leaving the **Miami** Airport see a different variety of trees at each separate traffic circulation pattern within the interchange. This variety helps direct traffic flow to the desired destination.







In all cases, care has been taken to choose plant materials that do not attract birds or create other hazards. Illumination and sprinkler systems installed as part of the project add to the total functional effectiveness.

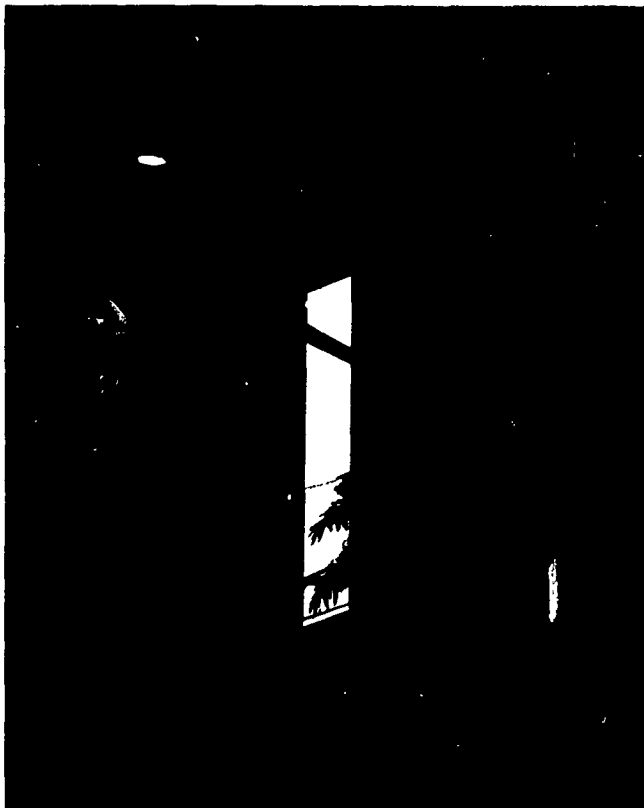
Hardy ground cover under all the guard rails eliminates tedious mowing and trimming around the guard rail supports. Maintenance has also been considered where embankment areas are too steep for mowing operations. Massive native shrub plantings that will eventually grow into self-maintaining thickets are laid out to greatly reduce maintenance requirements.

Truncated berms are established to aid noise attenuation and eliminate a number of very unsightly views when entering the parking garages.

Pedestrian circulation is designed with accent plants used to attract pedestrian attention to assist directional flow that will lead them safely to and from the terminal building. Mass shrub and hedge plantings are used as a barrier between vehicular and pedestrian circulation patterns. This type of planting combined with well-designed walkways, graphics, lighting, and walls forces pedestrians to use crosswalks.

A new international satellite terminal complex, completed in 1979, is served by a monorail device, moving people from the new satellite terminal to the main terminal about 1600 feet away.

The public spaces in this building are designed to include works of art. One pair of hanging metal sculptures by Bruce Beasley and a colorful standing metal sculpture by George Sugarman are located near the escalators and serve as focal points. Photographs are displayed in shallow alcoves along the lower corridors. Plant groupings and tapestries are effectively placed in key locations where they can be seen and enjoyed.



**Airport Contact:**

MIAMI International Airport  
Aviation Director  
Dade County Aviation  
Department  
P.O. Box 592075, AMF Branch  
Miami, Florida 33159  
Telephone: 305-871-3830

**Credits:**

Head of Design  
Telephone: 305-526-2323

**Landside site development:**

Stresau Smith & Stresau,  
ASLA  
Landscape Architects & Land  
Planners  
1601 South Andrews Avenue  
Ft. Lauderdale, Florida 33315  
Telephone: 305-525-3133

**International terminal:**

Harry Oppenheimer-Ross,  
AIA  
Architects/Engineers  
2780 Southwest Douglas  
Road  
Miami, Florida 33133  
Telephone: 305-445-0526

**Interior design:**

Dennis Jenkins

**Sculptors:**

Bruce Beasley, George  
Sugarman

**Photography display:**

Ansel Adams

**Features of Special Note:**

Landscape design  
Interior design  
Sculpture  
Photography  
Tapestry

Baggage Claim  
Ground Transport  
Gold Concourse



## Minneapolis-St. Paul

The **MINNEAPOLIS-ST. PAUL** International Airport, Wold Chamberlain Field, is noteworthy for recent improvements made to the terminal interior as well as to the exterior landscaping.

The public area of the airport is an open two-story space, with various concessions or facilities located to the sides. Recent renovation makes shop concessions more visible and accessible. New furnishings, quiet sitting areas, and wall paintings have been added. Flower vendors and gift shops bring color and interest to the open spaces of the terminal.

Another outstanding feature is the new terminal graphics system. The new "sign boards" located in the concourses are ceiling mounted and extend completely across the passageway. No signs are closer than 80 feet apart. This distance considers the ceiling height and average eye level of the viewer and assures that one sign board does not obscure another. Facilities identified on a board are no further than 20 feet away. The boards are constructed of tinted black plexiglass with white peel-off lettering. Lettering is upper and lower case, making the signs easier to read. Sign information is available in word copy so it can be quickly peeled off and applied. If there is a change required, the letters can be removed with little effort for greater flexibility. The letters are available in other colors besides white, but experimentation indicates that white on black provides the best visibility. Large colored concourse

identifier signs are used at each end of the main terminal space to direct the public to concourse or pier gate positions.

Carpeting is used at the inside entrance to the terminal, extending out about seven to ten steps from the door, to absorb moisture before passengers get to the terrazo floors. Carpeting is used in other high use areas as well, such as baggage claim and concession space. Here it is glued to the floor rather than being padded since padded carpet wears out quicker, puckers up, and becomes a potential hazard to pedestrians.

The roof of the terminal is a folded plate design which was formed and then concrete poured in place. Porcelain enameled panels used on the exterior of the terminal are still in excellent condition, showing very little adverse weathering.

Considerable efforts have

been taken to reduce the adverse noise generated by taxiing aircraft or those doing ground runups. An earth berm 15 to 20 feet high and 1½ miles long was constructed and has been planted with thousands of shrubs and trees. This also screens out unsightly areas, controls erosion, and helps to reduce noise.

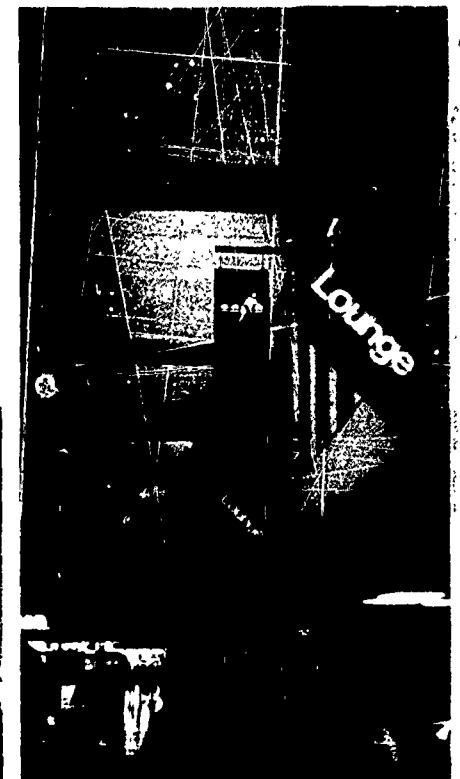
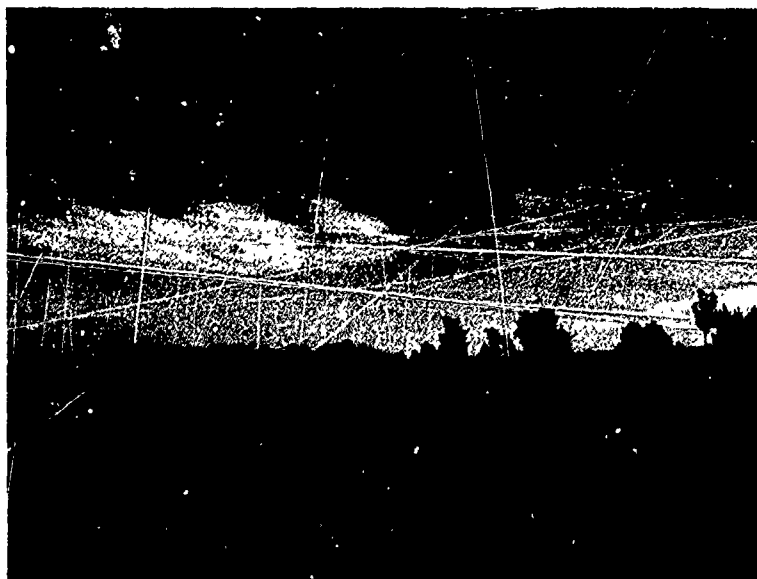
Another recent project reduced visual clutter and maintenance costs by eliminating scores of light standards along the access roads and parking lots. New high level light standards with greater illumination and energy efficiency are now installed.

Due to the severe weather conditions in Minnesota, the original design included an ice melting device in the roadway access ramps to the terminal. Although this was considered a good idea at the time, it did not prove to be practical and has since been abandoned.

**Airport Contact:**  
**MINNEAPOLIS-ST. PAUL**  
International Airport  
Executive Director  
P.O. Box 1700  
Twin City Airport Station  
Minneapolis, Minnesota 55111  
Telephone: 612-726-5774

**Credits:**  
(The architectural design firm responsible for this facility is no longer in business.)

**Features of Special Note:**  
Architecture





## Norfolk

The sponsor for the planned expansion of the **NORFOLK** International Airport terminal, the Norfolk Port and Industrial Authority, set down several criteria or goals the designers had to meet. One of the principal design goals set for the design team was to make the facility financially self-supporting. Therefore, considerable effort went into the layout of concessionaire spaces. Another key element was the commitment by the Authority to provide an attractive, modern terminal facility for the public as well as for lease space users.

The airport terminal has a unique beautiful garden setting, as it is located adjacent to the famous **Norfolk Botanical Gardens**. Hundreds of thousands of people tour these gardens annually. Visitors can enter the gardens from the airport terminal through a special pedestrian walkway. Pathways, trackless trains, and canal boats give visitors a variety of ways to enjoy the gardens, colorful in every season.

The building architect, Landscape architect, and the Port Authority have been nationally recognized for their successful efforts to construct the terminal without disturbing the delicate ecological balance of the adjacent natural woodland area. Nearly 8000 azaleas were transplanted to new locations within the garden property. The terminal was designed to blend with adjacent pines, rhododendrons, camellias, and azaleas, giving air travelers an unusual and beautiful, yet functional, air facility. Significant contributions were made by public servants

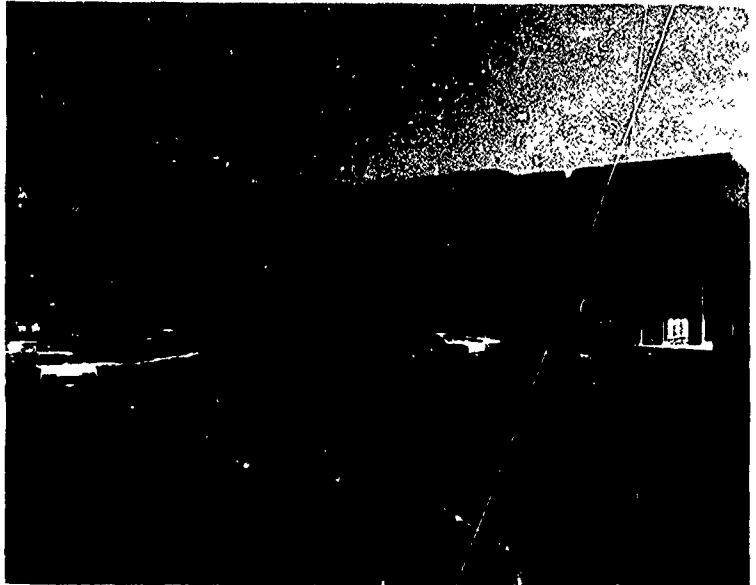
and private citizens—botanists, businesspeople, builders, airline executives, and Federal officials. The spirit of cooperation that infused the project is appropriately reflected by the serenity of the garden where it all took place. Tidewater's new air facility is a tribute to the imagination, dedication, and concern of a citizenry devoted to achieving progress while preserving the natural beauty of the area's landscape.

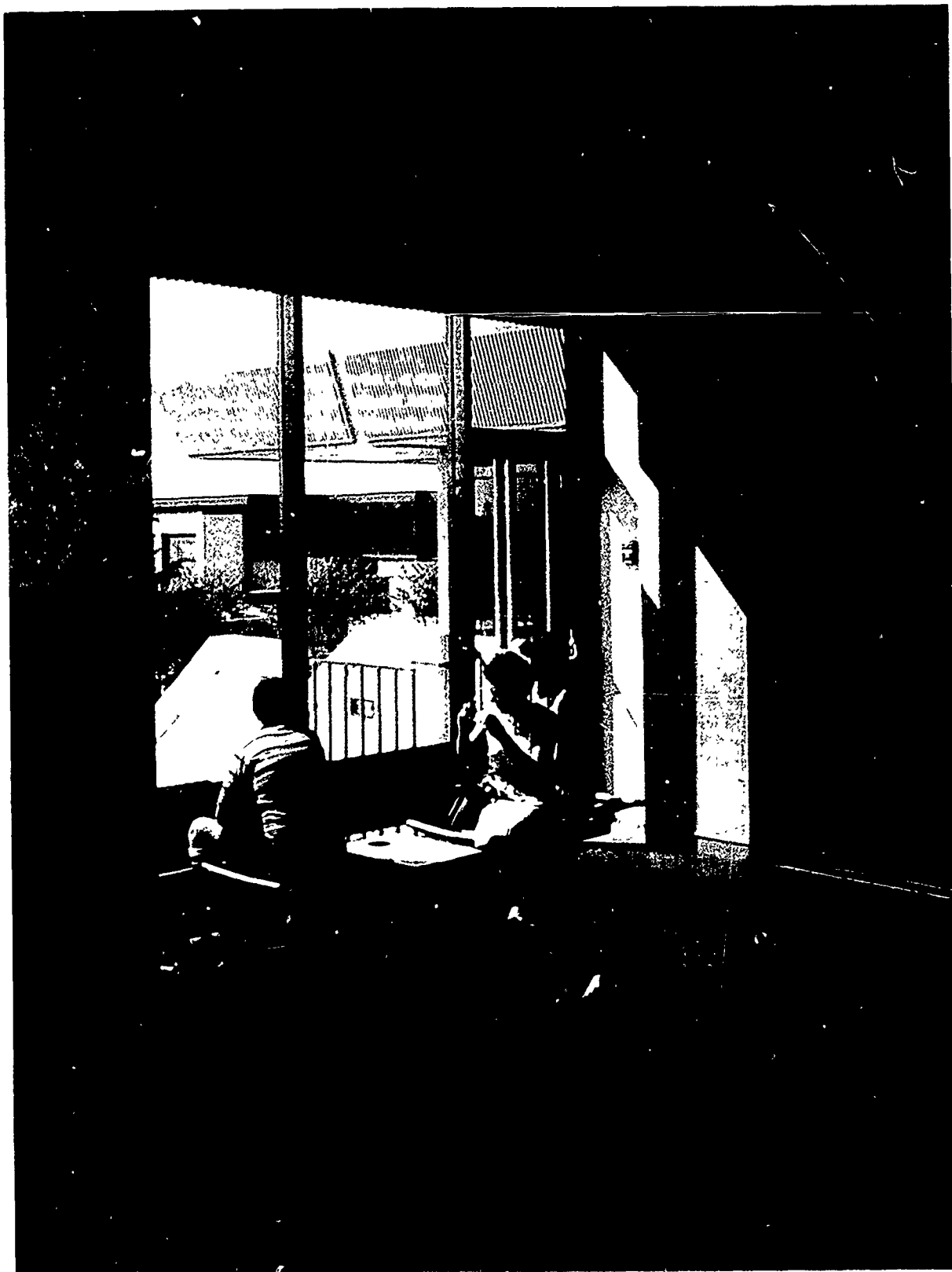
The following are excerpts from an article written for the *Airport Management Journal* of July 1976 by Henry V. Shriver, AIA, the project director and architect for the **Norfolk International Airport**.

### *Architectural Concepts of Importance to Airport Management*

"The achievement of architectural quality in the design of airport terminals, although usually desired and often achieved, is difficult to program as a contract requirement. We live in a highly technical world and can easily lose sight of the less measurable design features of harmony, proportion, satisfaction of the senses, and generally the provisions of an environment suitable for human use and enjoyment.

"The best design team will produce little of value without the unifying interest and commitment, as well as sustained direction, of a well-informed and steadfast management. Pressures arise from all quarters—some representing political interests. While there should be sufficient flexibility to respond to problem areas





(physical conditions of site, financial and scheduling realities, changing functional and technical requirements of carriers, and others), it is essential that the management and design teams be united in objective and firm in resolve.

"In the course of developing site features, consideration should be given to preserve or restore landscape material to diffuse noise, provide a visual screen for objectionable views, convey the season, and introduce the visitor to the natural setting of the area. Design can establish and maintain a unified, though not necessarily uniform, system of lighting and graphics. It can establish a vocabulary of building materials to reduce the chaos of visual clutter and impart a sense of order and harmony.

Important also is the control of overhead clutter. Power distribution, telephone, and other communications lines should be underground (including air conditioning cooling towers, vents, etc.).

"The passenger terminal is perhaps the most important single feature of the airport affecting passenger comfort and convenience. We have noted that the basic function of the airport terminal is to effectively and comfortably transition the passenger from ground mode to air mode transport system. Provision of adequate and expandable vehicular curb space is the point of beginning. More airports break down under traffic on the landside than the airside. Curbside should be protected from the weather and placed to minimize the travel

distance from departure ground transportation to the ticket counter where passenger and baggage can be separated

"Graphics, both exterior and interior, should be an integral part of the design to not only direct but to reassure the passenger and visitor. Failure to establish, control, and maintain a comprehensive system of graphics providing appropriate letterface, size, messages, and colors for the entire airport complex will assuredly result in the best of original designs soon becoming a circus of confusion.

"Not only does this condition distress the airport user, but it ultimately reduces concession revenue and provides a shabby gateway to the community served. The traveler today would prefer, and should be provided, a terminal which more meets his needs and supplies a comfortable, convenient,

and relaxed setting.

"All lighting, exterior as well as interior, with exception of occasional accent lighting, should be low-brightness type. Such design allows the pupils of the eye to open thus increasing general visibility. By keeping general illumination at moderate levels and providing task lighting where needed, eye fatigue is reduced and the fringe benefit of reduced energy consumption is attained.

"Throughout the terminal complex, care should be taken to provide facility and accommodation at the point of desire or need. The deplaning passenger will most likely have early need of toilet, locker, and phone. Passenger concourses, if used as a design element, should desirably be provided with small nodes where some seating can be placed for those who may tire of the long walk. These nodes can also be

points of visual relief with window openings to reduce the 'endless tunnel' effect and provide reassurance to the passenger that progress is being made toward either the aircraft or the baggage claim.

"Rather than having to rely solely on the graphics system, the arriving passenger, upon deplaning, might desirably see in advance the main terminal building that he is approaching and, if a departing passenger, have a glimpse of the apron and waiting aircraft.

"Always in the design and arrangement of things it should be the object to reassure the passenger and prepare him for the next transition. Passenger flow should be planned to clearly separate passenger ticketing operations from baggage claim functions. Conflicts between passenger traffic and operations and service traffic can and should be avoided.

"Equally as important is the 'design' of the airport use agreement which establishes the responsibilities of carriers and management and defines how the facility is to be used and maintained. To assure preservation of the architectural features of all public areas, the airport management team and the design team share a mutual interest in the drafting of those portions of the airport use agreement which detail tenant responsibilities and establish management control with respect to physical facilities."

#### **Airport Contact:**

NORFOLK International Airport Manager  
Norfolk Port & Industrial Authority  
Norfolk, Virginia 23518  
Telephone: 804-748-0304

#### **Credits:**

Shriver & Holland Associates, AIA  
Architects, Planners & Project Coordinators  
355 West Freemason Street  
Norfolk, Virginia 23510  
Telephone: 804-627-4525

Sasaki, Dawson, Demay Associates  
Landscape Architects  
64 Pleasant Street  
Watertown, Maryland 02172  
Telephone: 617-926-3300

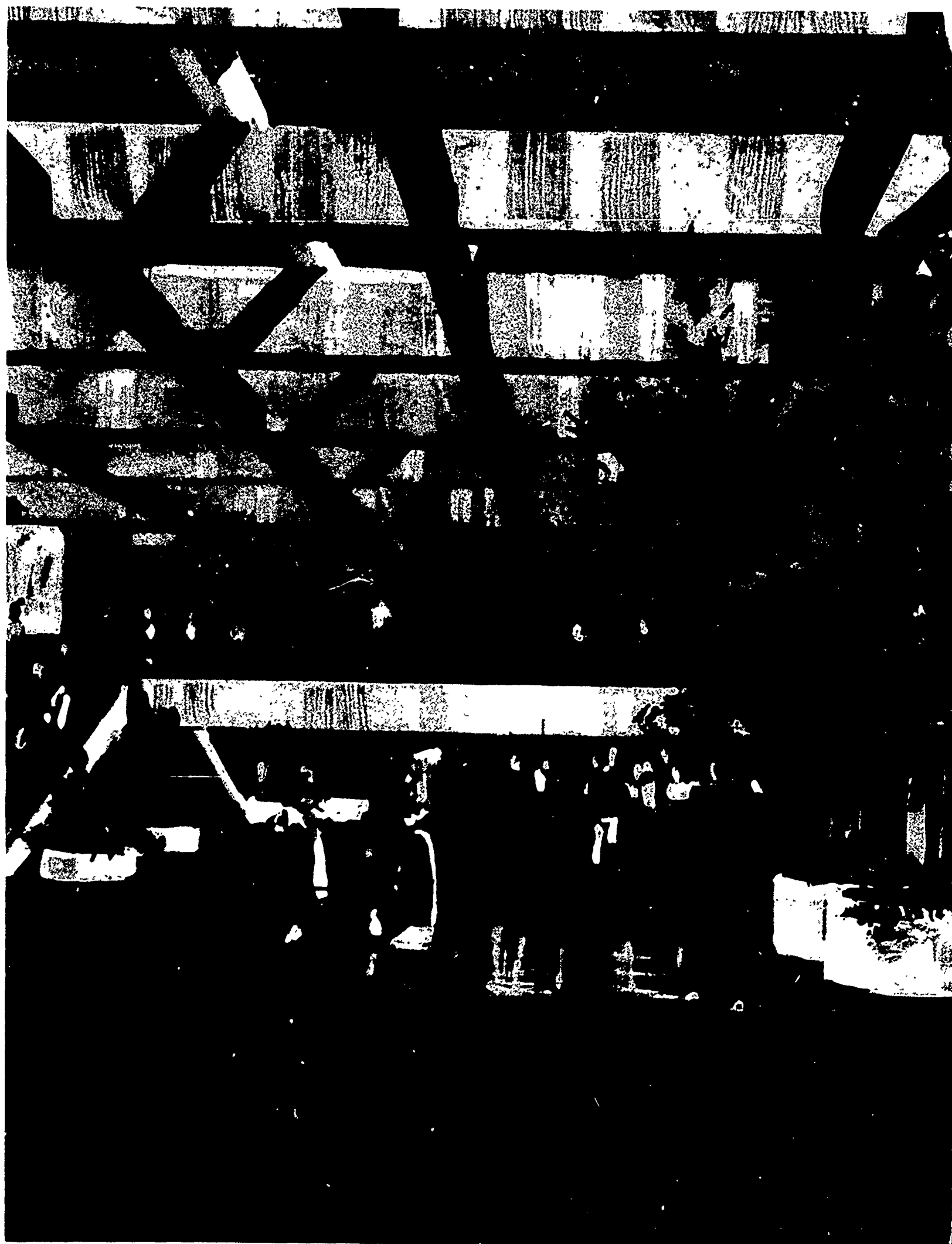
Graphics consultant: Peter Muller-Munk

#### **Features of Special Note:**

Architecture  
Site design  
Graphics



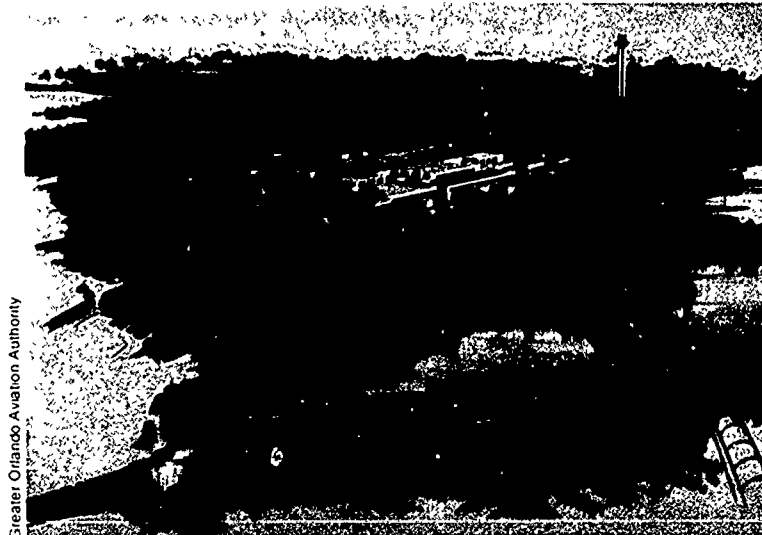




## Orlando

In designing the new **ORLANDO** International Airport terminal, the Airport Authority wished to minimize the adverse impact on wildlife in the area and take positive steps to improve wildlife habitat while not creating bird hazards to aviation operations. The Authority, therefore, invited participation by representatives of the local and state Audubon Societies early in the planning stages. Extensive planting and reforestation have already started, and careful monitoring is being done to ensure safety.

The design criteria for the new terminal to be built at **ORLANDO** include over 40 specific items. In particular the designers must include a public/common use space to provide a centralized meeting place which reflects the local community's flavor. The criteria allow the sculpturing of an architec-



Greater Orlando Aviation Authority

turally and aesthetically bold statement, with emphasis on human scale and providing maximum reflection of the central Florida environment within each construction phase. Energy saving designs such as venturi effect and solar and/or

windmill turbine power for land-side illumination must be considered and incorporated wherever feasible. The Authority has also specified a well-designed graphics program, as well as supergraphics, to assist the traveling public.

The planning of the new facilities included interior designers as well as landscape architects who have included various design amenities. The people of the community have been involved since the early planning stages and have played an important part in establishing the design criteria.

### **Airport Contact:**

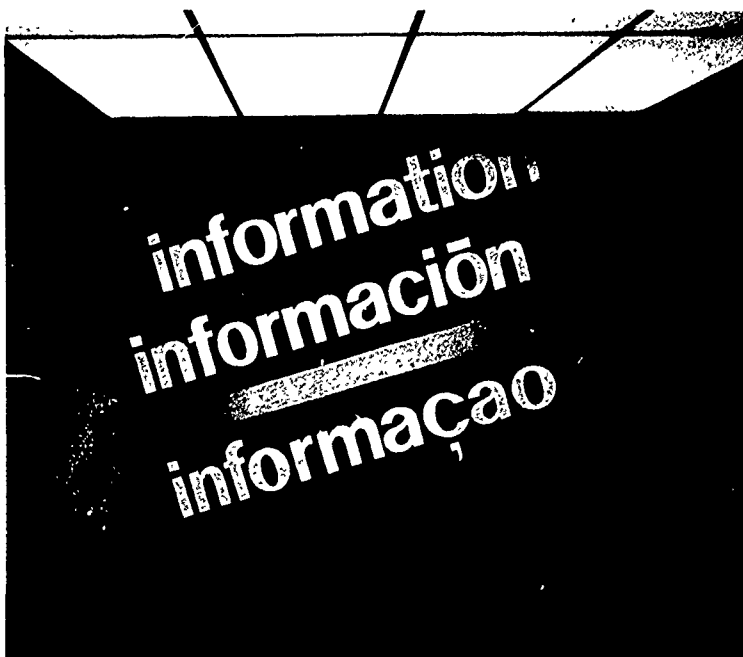
ORLANDO International Airport  
Greater Orlando Aviation  
Authority  
P. O. Box 19127  
Orlando, Florida 32814  
Telephone: 305-855-8841

### **Credits:**

The Greater Orlando Aviation  
Authority Airport Planning  
Department  
The Greiner Team  
P.O. Box 12469  
Orlando, Florida 32809  
Telephone: 305-851-7500

### **Features of Special Note:**

Landscape  
Site planning





## Palm Springs

In PALM SPRINGS, California, a master plan for development of a municipal airport and a major boulevard leading into it commenced when the Air Force turned the facility over to the city for commercial use. Detailed planning for an airport terminal began by scheduling meetings with expected users: airlines, rental car companies, and many concessionaire representatives. Strict local controls over land use and development were included.

An analysis was made of economic trends for the city, region, state, and Nation, in conjunction with an evaluation of aviation forecasts. All of this was done to determine what kind and amount of space would be required for the short-term, as well as the long-term, needs of the airport.

As demographic data were collected, the planners recognized special user needs. Since the users of this facility were likely to demand a higher class of accommodations and amenities than is usually found in public spaces, special care was taken to design and maintain an aesthetically pleasing appearance. For example, space was provided to dispense as many as 15 different newspapers, and provisions were made for leasing luxury cars.

Designers and sponsors at any airport are advised to carefully assess the users for which



the facilities are planned. Human requirements are much more diverse than classes of aircraft, the tendency is to engineer our facilities more for machines than for the needs of people. To best plan and evaluate facility needs of the local public, it is highly recommended that a multiple design team be retained. Proper maintenance is also a critical factor and was a basic part of the initial design requirements.

Consideration of the local community is equally important.

People in a nearby residential area expressed opposition to the FAA ground surveillance radar facilities. These units are normally painted orange and white. As a result of meetings, the facilities at Palm Springs were painted so as to be unobtrusive and blend into the area. This, of course, was done in a way that did not sacrifice the safety or efficiency of the ground radar unit.

### Airport Contact:

PALM SPRINGS Municipal Airport  
Director of Transportation & Operation  
Palm Springs, California 92262  
Telephone: 714-323-8163

### Credits:

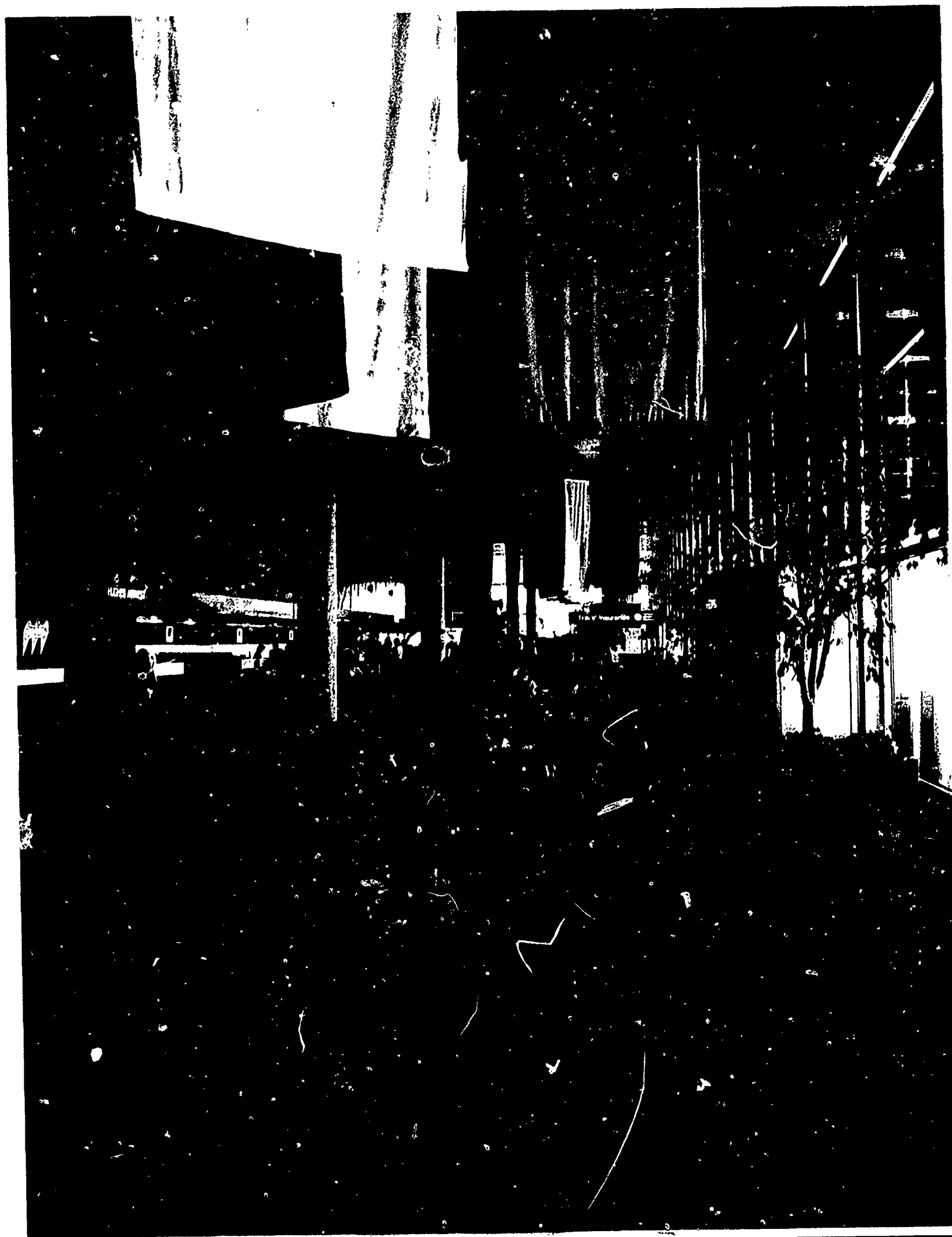
Mr. Donald Wexler, AIA  
Architect  
199 South Civic Drive, Suite 10  
Palm Springs, California 92262

Mr. David Hamilton, ASLA  
Landscape Architect  
1500 South Palm Canyon Drive, Suite 4  
Palm Springs, California 92262  
Telephone: 714-325-3617

### Features of Special Note:

Architectural treatment  
Landscape design  
Fountain





## Portland

The basic design goal for the **PORTLAND** International Airport was that it be designed to accommodate the needs of people. It was quickly determined, after studying the design of other airport facilities, that passenger safety, comfort, and convenience should be among the top priorities. The planners also felt that the design should reflect local materials and attitudes and a sensitive concern for the environment. Noise was to be minimized and maintenance carefully performed.

The ticket lobby at the **Portland** International Airport personifies hospitality. It is a statement of Oregon. Rich Pacific-northwest colors and materials fill this restful setting. Wall paneling is of warm western red cedar. Four 55-foot long, full color photo murals depict Oregon scenes. Hanging banners celebrate Oregon's major industries. Fabric panels printed with Oregon wildflowers provide privacy for seating arrangements.

In the quiet sitting areas, carefully designed oak furniture, plants in large containers, good illumination for reading, and tables for writing are all provided to the public. Comfortable

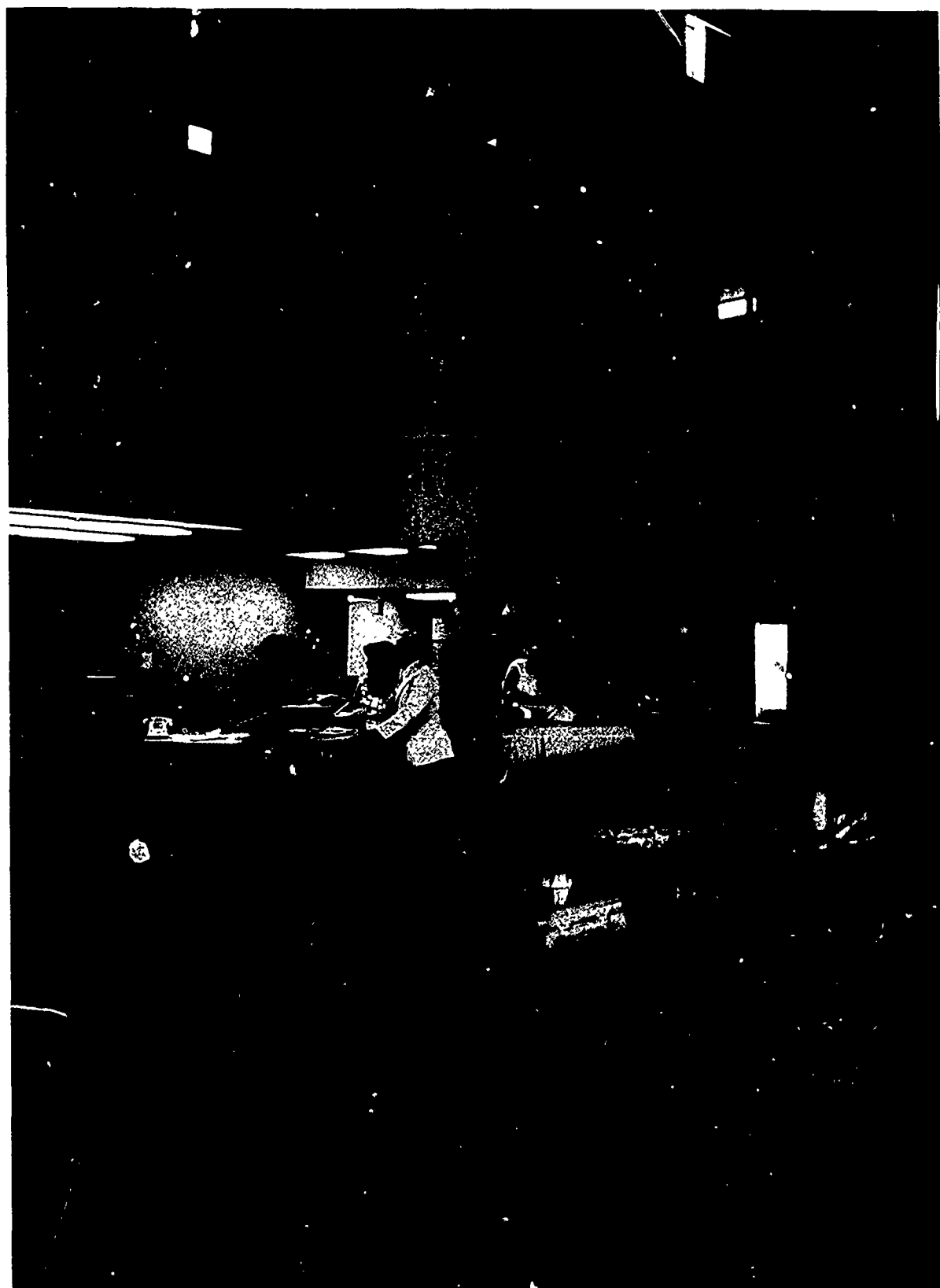
lounge chairs and sofas with custom upholstery blend harmoniously with colorful and distinctive carpeting in all public areas. A warm feeling of unhurried hospitality has been achieved throughout the terminal.

The terminal area of the **Portland** International Airport is one of the cleanest, greenest major airports in the country. It features 54,000 English ivy plants for ground cover, 744 trees, 2653 shrubs, plus another 350,000 square feet of grass. A color-coded sign system helps visitors distinguish between the terminal building (blue), parking areas (red), and other landside services (green). The first sign is intended to catch one's attention and contains three colors but no written message. The second sign explains the color code system and gives directions.

Three roadways serve the terminal building. Unplaning passengers in cars, taxis, and limousines unload at the upper level, adjacent to the ticket lobby; deplaning passengers can be met at the lower roadway immediately outside the baggage claim lobby; and public transportation vehicles use an outer courtesy roadway. Pedestrian tunnels link the terminal building with the outer roadway and parking lot, eliminating the need for pedestrians to cross roadways. Bus departure times are given on an illuminated sign for passenger convenience. Special consideration is given to handicapped persons throughout the terminal.

Escalator speeds, that initially





caused problems when set to move at 120 feet per minute, were adjusted to 90 feet per minute to keep people from falling. At some terminals, escalators are illuminated from underneath with either green or red lights to bring attention to the top or bottom of the stair run. (In other terminals, managers have installed a speaker system calling people's attention to the stairway, which is considered especially helpful for the handicapped, blind, or inattentive traveler.)

Nearby Hillsboro and Troutdale Airports are also under the control of the Portland Port Authority. These general aviation facilities are particularly well-designed and attractive inside and out, reflecting the region through the use of rich, natural woods and attractive landscaping. The total design at these general aviation facilities reflects the sensitivity and concern of the local authority for good planning. The public finds the restaurant at the Hillsboro Airport a favorite place to dine. The restaurant can accommodate approximately 200 persons. Its interior is exceptionally well-done, using paintings and excellent models of World War I aircraft. Diners relax in a wood-paneled atmosphere overlooking the active general aviation apron area with a view of the mountains beyond.



Port of Portland, Oregon

**Airport Contact:**  
 PORTLAND International  
 Airport  
 Director of Aviation  
 Operations Supervisor  
 Port of Portland  
 P.O. Box 3529  
 Portland, Oregon 97208  
 Telephone: 503-233-8331

**Credits:**  
 Zimmer, Gunsul-Frasca  
 Partnership, AIA  
 Architecture, Planning/Interior  
 Design  
 111 Southwest Oak  
 Portland, Oregon 97204  
 Telephone: 503-224-3860

**Architect:**  
 Mr. Jack O. Cornwall, AIA  
 Associate Partner

Mr. William Roth, ASLA  
 Landscape Architect  
 122 Southwest 3rd Avenue,  
 Apt. 200  
 Portland, Oregon 97204

**Features of Special Note:**  
 Architecture  
 Interior design  
 Site design  
 Graphics



Photo Art, Portland, Oregon



cocktails

phones



## St. Louis

On April 15, 1976, the **LAMBERT-ST. LOUIS** Airport terminal building's east addition, housing the international wing and the Federal Customs & Immigration Services, was opened. The architectural style of this addition complements the well-known domes in the main terminal complex.

The international wing is a ten dock facility employing mobile elevating passenger lounges. Passengers, either international or domestic, scheduled or charter, are efficiently and luxuriously transported in a matter of minutes from the building to remotely parked aircraft.

The international wing also provides additional concession areas. These include a sports shop, a package liquor store, and a news shop, all located in one complex that also contains an amusement room and post office. This complex of small shops has become a popular center of activity in the new wing.

A speed ramp in the wing carries people from one level to another. This ramp is an adaptation of a moving sidewalk and eliminates the use of escalators, thereby eliminating a major barrier to handicapped individuals.

The new Federal Customs & Immigration Services are available 24 hours a day. These facilities represent some of the most modern available and are designed to process as many as 300 passengers per hour.

The airport and airlines tested a temporary interline baggage transfer system in an

effort to reduce congestion in the baggage make up area. The transfer system has been well-received, and plans are being drawn for a permanent system.

The east, west, and center concourses offer a total of 43 new jetway gate positions. Remote aircraft arrivals and departures, to and from the international wing, are handled by the transporters or mobile lounges.

The public areas of the new concourses are spacious and colorfully carpeted. Attractive utility islands have been installed to help separate the two directions of traffic. The islands offer telephone booths, waste receptacles, and a place to rest, and are accented with tropical plants and good illumination. These highly used areas also provide a visual focal point down the long corridor. Overhead, the steel truss framing is left exposed and painted black. On either side of the corridor at the ceiling are two highly polished 32-inch diameter air conditioning ducts. The total effect of bright carpets, island plantings, dark ceilings, and air ducts adds up to a very interesting treatment.



The Missouri Museum of Natural History has on display in the airport several exhibits related to flight, which attract children as well as adults. The principles of aerodynamics illustrate how the wings of birds enable them to fly. Models of man's early attempts to fly are displayed and show an amazing resemblance to the structure of bird wings. In addition to these popular display materials, the museum has also sponsored a colorful mural related to flight, painted on the side of the speed ramp. The work was done by two local artists and is easily seen and enjoyed by passengers or visitors to the terminal.

The new east addition houses two displays of Charles Lindbergh aircraft, one a replica of the Spirit of St. Louis used to film a movie about this famous early pilot.

Plans are now final for another major project at **Lambert-St. Louis**: the main terminal alteration and addition. This project will include expansion of the airline ticket counters, a new and expanded baggage claim area, and an expanded outbound baggage make up area.

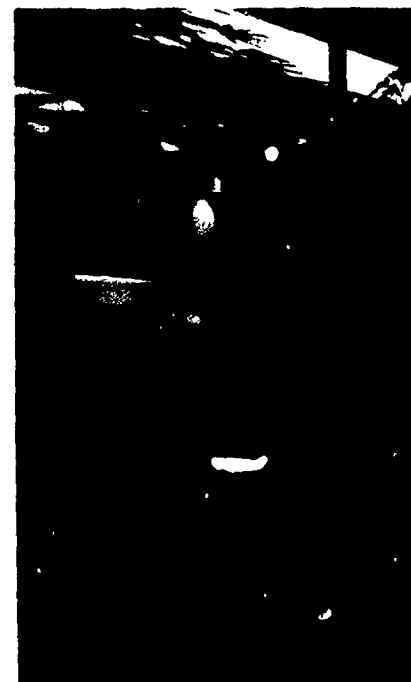
**Airport Contact:**  
**LAMBERT-ST. LOUIS**  
International Airport  
Director of Airports  
P.O. Box 10212

Lambert Station  
St. Louis, Missouri 63145  
Telephone: 314-426-4430

Assistant Manager  
Telephone: 314-426-3368

**Credits:**  
Architects:  
Sverdrup/Parcel  
12th Delmar  
St. Louis, Missouri 63101

**Features of Special Note:**  
Graphics  
Interior design  
Museum displays



"For me, aviation has value only to the extent that it contributes to the quality of the human life it serves."  
Charles A. Lindbergh, July 1972

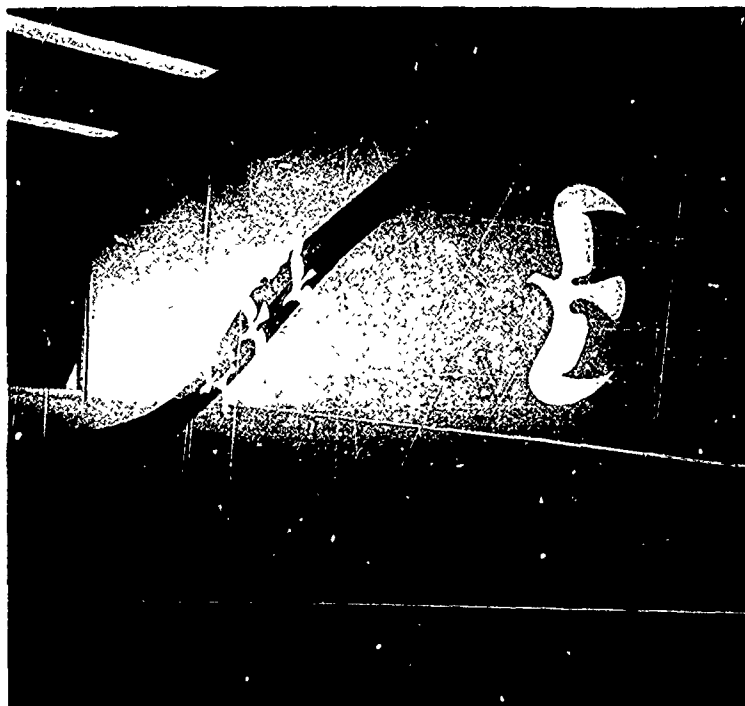


## San Francisco

The City Charter of the **SAN FRANCISCO** International Airport requires that 1½ percent of all construction costs be spent on the arts. As a result, \$1,707,000 has been set aside for art work in the new terminal, and an art environment working committee has been established to consider the inclusion of specific pieces.

Many meetings have been held with representatives from the Airports Commission, the airport design consultant, the art commission, and the San Francisco Museum of Modern Art. As a result of these meetings, a schematic program has been formulated which recommends the type of art work which should be purchased and where it should be designed into the public spaces to benefit the greatest number of people. The committee has also dealt with the question of the ownership of the art work.

During the early design stages, the design team considered borrowing works of art from various sources. It was eventually decided, however, that art should be purchased from existing works, rather than commissioned, to avoid any controversy. The committee also felt that changes of display



should be allowed and that donations should be very carefully evaluated before acceptance.

Design of specific areas for the placement of art works should also be a matter of early consideration. Otherwise, those features of art may look as if they were simply added to a wall or space in which nothing else was appropriate. The following points should be seriously considered:

1. What is the design problem? Can inclusion of sculpture, works of art, or architectural details help to solve that problem?
2. What are the causes of the problems or anticipated problems in any one area?
3. What are the possible alternative solutions? Can the use of graphic aids or the care-

ful use or sensitive choice of any number of art forms help? Should the solution be one of architectural detailing?

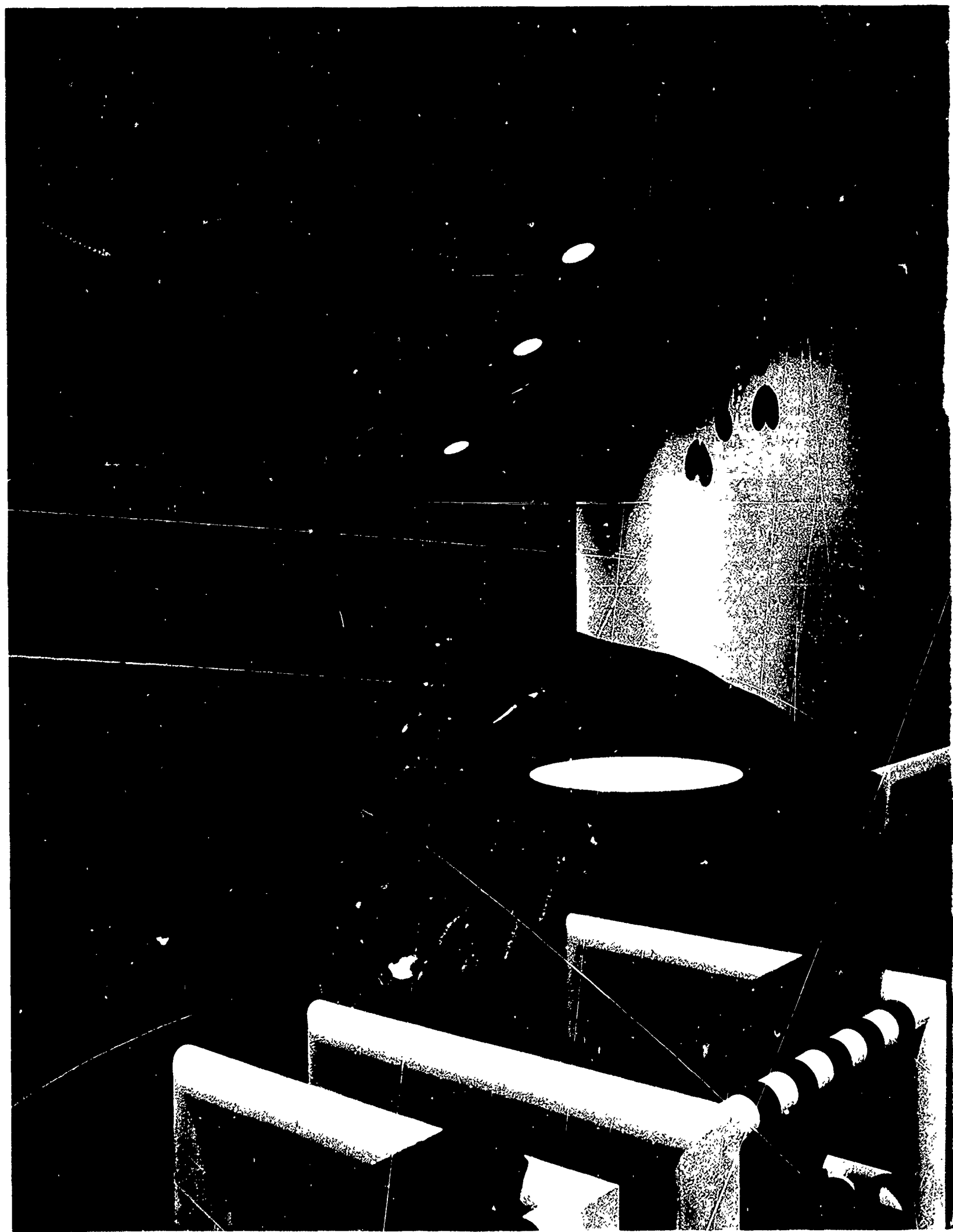
4. What is the recommended solution?

There should be no doubt about the importance that well-designed graphics programs can play in assisting the movement of passengers through an airport terminal area. Graphic directional or informational messages should help assure the traveler and reduce confusion and stress.

**Airport Contact:**  
SAN FRANCISCO International  
Airport  
San Francisco Airports  
Commission  
San Francisco, California  
94128  
Telephone: 415-761-0800

**Credits:**  
Art Enrichment Program for the  
North Complex:  
Director of Airports

**Features of Special Note:**  
Sculpture  
Paintings  
Tapestry  
Prints  
Photography



## Seattle-Tacoma

The **SEATTLE-TACOMA** International Airport (**SEA-TAC**) not only gives prime consideration to the needs of the traveling public; it also reflects the cultural interests and feelings of the Seattle community. This good design is not accidental but results from a sound, careful evaluation of collected data and information. In this case a survey was taken of various airport users, including housewives, business people, tourists, airline representatives, and other concession or lease space users. Public attitudes and opinions were carefully evaluated and incorporated into the final design.

A concerted effort has been made to line up corridor flow and to keep interior spaces simple, uncluttered, and as quiet as possible. Deplaning passengers are separated from those waiting flight departure.

Interior signs, as well as exterior signs/graphics, are a major factor in successfully moving people through the terminal. Colors are carefully selected. Primary pathways are kept open with as few turns or changes in elevation as possible.

Too seldom is careful consideration given to the feelings of children in airport design. The noise, confusion, and stress the child (as well as the mother) is exposed to at an airport require special thought and planning. In the treatment of the children's nursery the interior space, color, furnishings, and design are carefully handled. These facilities offer a pleasant, peaceful haven and go a long way towards solving the stress problem.

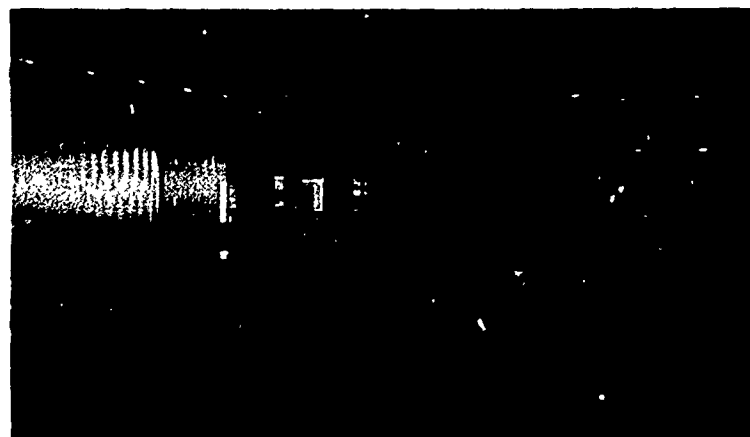
The Port of Seattle Commission, firmly convinced that artistic works of high quality enhance the **SEA-TAC** International Airport, dedicated its art acquisitions on August 1, 1973. The art works were selected to provide a variety of moods and experiences throughout the main floor of the passenger terminal. Artists were chosen by competition and by direct selection. They include nationally known artists from the Pacific Northwest and other areas of the country.

None of the paintings have been defaced. However, one large black metal sculpture has tempted people to write on its flat surfaces. Another smaller

sculpture with a highly polished chrome surface is easily marred by fingerprints. Both sculptures have required more maintenance than expected. Due to the shape of the large sculpture a portion of it is an obstruction to pedestrians, a matter that should have been assessed in its design and placement.

Other sculpture or displays showing local/regional crafts are enclosed in cases, thereby reducing vandalism and maintenance.

It is interesting to note that the original cost of the art in the terminal was \$300,000; its value in 1978 was estimated at over one million.



### **Airport Contact:**

**SEATTLE-TACOMA**  
International Airport  
Director of Aviation

Director of Planning &  
Research

Director of Aviation Operations  
Maintenance

Port of Seattle  
P. O. Box 1209  
Seattle, Washington 98111  
Telephone: 206-587-3380

### **Credits:**

Mr. Allen D. Moses, AIA  
Project Director  
Mr. Roi Nevaril, ASID  
Interiors Director  
TRA, The Richardson  
Associates

215 Columbia  
Seattle, Washington 98104  
Telephone: 206-682-1133

Landscape Architect:  
Talley & Associates  
Sasaki, Walker & Associates  
2200 Bridgeway Blvd  
Sausalito, California 94965  
Telephone: 415-332-5100  
Graphics: Mits Katayama

### **Features of Special Note:**

Architecture  
Site planning  
Works of art (19) including:  
sculpture  
painting  
kinetics  
tapestry

Alan Moses, Seattle



## Springfield

**CAPITAL** Airport, Springfield, Illinois, is owned and operated by the Springfield Airport Authority. Dedication of the new airport and inauguration of scheduled services by American Airlines took place in November 1947. In 1949, **Capital** Airport was selected as headquarters for the Illinois Air National Guard, and major improvements were made that year including a large new hangar, apron, and taxiway extensions as requested by the Illinois Department of Aeronautics. In 1955, increased traffic necessitated further improvements. Improved landing strips, additional hangar space, public areas, and enlarged facilities for airline service were built; the completely remodeled airport was operational by late 1959.

The Springfield Airport Authority's proposed development of the north quadrant at **Capital** Airport has been implemented with the construction of a landscaped and lighted access road, a new safety/security facility, and a new headquarters building for the Illinois Department of Aeronautics. Future plans call for increased terminal facilities with more and better airline ramp positions; greater ticket, baggage, airline office, and public space; additional departure lounges and concourses; restrooms and food, beverage and overnight facilities. More automobile parking areas will be provided for passengers, visitors, spectators, employees, car rental agencies, National Guard, and general aviation users.

The National Weather Service has scheduled the installa-



tion of new weather radar and a weather services office. The new office building will be shared with other Federal agencies and is located in a special area of the airport reserved for compatible land use facilities.

Similarly, the development of extensive facilities for a fixed base operation in the north quadrant of the airport property will dramatically accelerate the development of the airport industrial park area. All buildings will be design-coordinated to give coherence and unity to the entire airport complex.

Also of particular note is the new FAA control tower. This attractive facility takes advantage of energy conserving techniques and technology. Passive solar collectors are used along with energy efficient heat pump air control systems. Earth moundings and plantings also help to conserve energy.

The Springfield Airport Authority understands and appreciates the desirability of having a well-designed, attractive,

properly maintained facility, especially since the **Capital** Airport is a major gateway to the state capitol. Distinctive light fixtures illuminate the highway to the airport from downtown. The entry to the main terminal is attractively landscaped and is accented by masses of flowers. Earth berms are used along with plantings to screen off unattractive, cluttered areas. Along portions of the adjacent four-lane highway, plantings effectively screen bright lights of aircraft that can be dangerously distracting to motorists. There is no evidence that these plantings have generated an increase in wildlife, although this factor was seriously considered before landscaping was begun.

Planners of the airport took concerted efforts to assure a unified design motif and architectural treatment. This is not the case at many airports, where each structure is designed by a different architectural firm and little or no attempt is made to interrelate the various buildings.

### **Airport Contact:**

CAPITAL Airport  
Airport Manager & Director of Operations  
Springfield, Illinois 62708  
Telephone: 217-528-7551

### **Credits:**

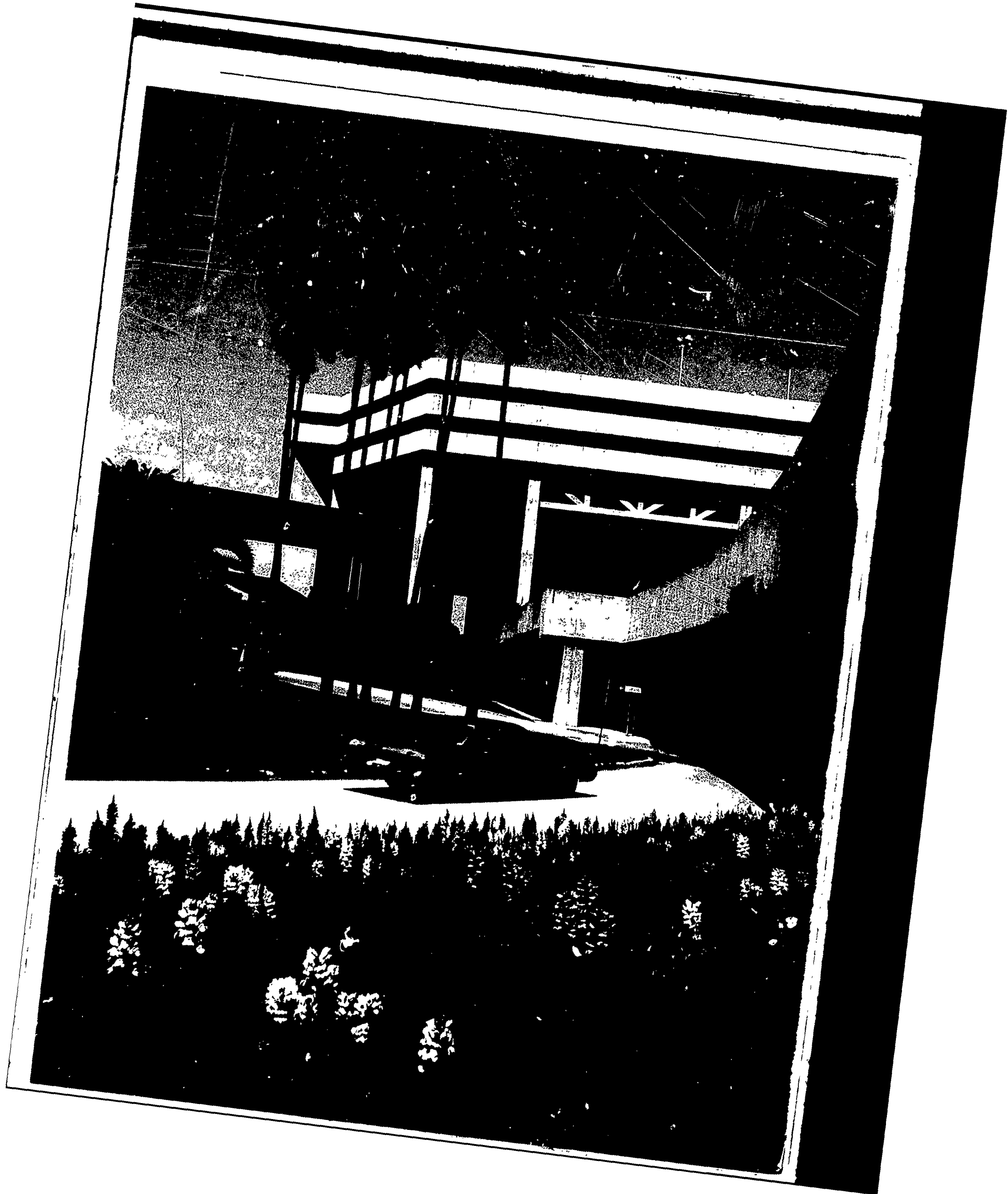
Ferry & Henderson Architects Inc.

1320 South State  
Springfield, Illinois 62704

### **Features of Special Note:**

Site planning





## Tampa

At the **TAMPA** International Airport, the basic design goals were established by the Aviation Authority to achieve a new airport terminal design that (1) keeps the public in mind, (2) minimizes walking distance to 700 feet or less, and (3) emphasizes the "Florida look."

In the design of the new terminal, consideration for inclusion of the arts started early. There was a persistent conviction that there had to be a better way to design an airport terminal. This, plus staunch support by an enlightened local citizenry enabled the Hillsborough County Aviation Authority to complete **Tampa** International Airport, one of the most successful and workable airport complexes in the history of commercial air travel. Airport representatives and designers from all over the world have visited and studied the terminal facilities to gain ideas and information to assist them in planning their own facilities. The Aviation Authority has shown its concern for the welfare of the airline traveler as well as the airport employee by insisting that **Tampa's** new terminal offer the ultimate in comfort, convenience, and eye appeal. They noted that many airport terminals are experiencing the "sprawl" phenomenon, causing longer and longer walks for airline passengers. This is caused

in part by larger aircraft which require more apron space.

**Tampa's** design counteracts sprawl.

The new terminal has separate airside/landside facilities. The airside satellites are devoted to the needs of the airplane, while a central landside structure accommodates passengers' ground-based needs. The airside is designed to service aircraft and handle the loading and off-loading of passengers, baggage and cargo. The key to the success of **Tampa's** innovative terminal concept is the elevated passenger shuttle system. Each car can hold approximately 100 people. The three airside satellites are connected to landside by a separate leg of the passenger shuttle service.

The landside building features a series of vertically stacked levels of baggage processing, airline ticketing, and exchange points for the passenger shuttle system. The landside building, the focus of the passenger's ground-oriented activities, contains more than one million square feet of floor space and parking for 1800 cars. The six-story building has its foundations and supporting columnar system sized for the ultimate height of nine stories. There are 16 elevator cabs (with room for eight more), an escalator system, and conventional stairways linking the six levels for speed and convenience.

All ground transportation to and from the terminal follows clearly defined lanes to specific points using color-coded directional signs for designated air-

lines—grouped into red and blue sectors. The color-coding employed for roadway direction is continued throughout the interior of the landside building. Planners stressed the design of circulation roadways, access ramps, and parking facilities. The arriving motorist is offered the choice of parking directly atop the terminal building or in a long-term surface level area.

The construction and decor of the individual airside satellite buildings are pleasing to the eye and as varied as the airlines they serve. The Aviation Authority offers the airlines a free range of design expressions, with three broad restrictions: (1) the walking distance traversed within the airside must not exceed the designed overall "walking budget" of 700 feet, (2) the buildings must stay within an assigned space envelope on the aircraft parking apron, and (3) the buildings must be aesthetically compati-

ble with the landside building.

Jane Davis Dogett, President of Architectural Graphics, executed the design concept for all visual semantics. The essential idea was to create a definite "Florida look"—a flowing feeling bringing Florida's tropical outdoor beauty into the terminal. A wide range of textures was used to create a sense of relaxed warmth and quiet and an atmosphere that is rich and almost opulent—yet easily maintained.

In developing the interior design concepts, extensive data were collected and three-dimensional models were used to study anticipated behavioral patterns and areas of maximum traffic flow, dictated by the interplay of various passenger and sightseer activities. The interior design theme is not intended as decoration but is an





intrinsic part of the building itself. A heavy wood frieze is used on all overhead wall areas. The huge open wells containing escalators and interior stairways have partially dropped surrounding walls, and they are decorated with massive metal bird sculptures which provide a point of visual interest for the escalator rider, deterring his sense of open sustained descent. High intensity lighting is used to backlight graphics panels and identify signs at airlines' ticketing counters. For general illumination, direct lighting of a stark or intensified nature is avoided. Incandescent down-lighting casts pools of soft light onto the massive carpeted floor areas, creating a warm and restful atmosphere.

Research for just the right carpeting material was intensive. As a result, a special pattern was created, designed to hide cigarette burns and chewing gum. It is interesting to note that, in order to reduce carpet maintenance problems, no concessionaires are allowed to sell gum or popcorn. Each individual dye lot is separated by three-foot wide bands of contrasting but compatible carpeting. The carpet was glued directly to the floor. Residential shag in hexagonal forms provides texture and hue. These bright color combinations are used in seating areas as well.

The hexagonal shape is repeated throughout the building in information islands, trash receptacles, and planters. The



numerous ash trash receptacles (cigarettes go in the top, trash underneath) are cantilevered and located on brokenfaced marble columns to make floor vacuuming easier. Seating is arranged on red, yellow, and orange shag carpeted hexagon patterned areas. The dual seats are cantilevered from a connecting pedestal, housing self-contained ash receptacles. Each tandem unit is placed so that individual occupants have unimpeded lines of vision. Backs and seats of black naugahyde heat-welded upholstery are interchangeable, reversible for longer wear, and easily removed for replacement. The rich color and texture of large public use areas are complemented by the use of red, blue, and white glazed brick surfacing on walls of the elevator banks and shuttle system stations.

The **Tampa** Airport's \$81 million budget included the commissioning and installing of sculpture, fountains, and other works of art. In the terminal, there are four hanging sculpture groups located over escalators for maximum effect. There are two floor-mounted groups of copper sculpture. All works portray Florida birds. Maintenance of these pieces has proven very minor; they are cleaned only two or three times a year. The design concept for the terminal provides for lighting to illuminate the sculpture and art work. No vandalism of any sculpture has occurred to date.

The visitor's introduction to Florida through the **Tampa** terminal is appreciably heightened by the presence of the eye-

catching metal sculptured birds. The suspended flight of cranes and seagulls, much larger than life, dominate the ticketing level airspace wells around the four majestic escalator facilities. On the transfer level is a multiple collection of birds from Florida's seacoasts and everglades. They are perched on copper-clad pilings, gleaming in contrasting hues of welded copper, bronze, and silver. These standing bird groups are arranged in hexagon-shaped gravel beds, covered with white polished stones.

Massed planters of various sizes are situated to complement key wall areas and to dominate the foreground of glass exterior walls. Mature specimens of subtropical greenery are used in hexagon-shaped planters. The landscape architects, working closely with the interior designers, were responsible for specifications related to all interior and exterior plantings.

An exterior decorative highlight is the Fountain Plaza facing the landside building's south deplaning driveway. The three fountains are illuminated for a beautiful nighttime effect. The central fountain is hemispherical and is nicknamed the "Peacock's Tail" because of its spreading, feathery beauty. It is set into a concave basin paved with antique bricks reclaimed from some of Tampa's early (but now destroyed) streets. Two vertical fountains, sending up tall multiple water plumes, flank the central fountain. Group plantings of trees and shrubs are designed to act as sound barriers, accents, visual barriers or guides, and to cre-

ate a natural park-like atmosphere.

The Aviation Authority staff offices house an outstanding gallery of representative paintings, serigraphs, half-tone lithographs, and sketches by area artists. Also on display are murals depicting the history of flight, done in the mid-1930's under the WPA Artists Program for **Tampa's** original airline terminal. The most dramatic mural, commemorating the start of scheduled flying boat service between Tampa and St. Petersburg in 1914 (a world "first") covers an entire wall in the Authority's board conference room. It, like the other small murals, was salvaged when an earlier terminal located at the Peter O. Knight Airport was demolished.

Blending beautifully into the terminal complex is a hotel of curving symmetry with 300 luxury rooms. The nine-story hotel features a meeting room for 1200 people, parking for 400 automobiles, nearly 50,000 square feet of rental office space, various special purpose meeting and dining rooms, and is topped off with a glass-walled revolving restaurant seating 350. A bridge mall provides a direct interior link between the landside transfer level and the hotel's third story lobby.

The people of Tampa are justly proud of their striking airport complex terminal facilities. The airport has become one of the community's outstanding architectural attractions.

#### **Airport Contact:**

**TAMPA** International Airport  
Manager of Airports  
Hillsboro County Aviation  
Authority  
P. O. Box 22287  
Tampa, Florida 33622  
Telephone: 813-883-3406

#### **Credits:**

Greiner Engineering Sciences, Inc.

5601 Mariner Street  
P. O. Box 23646  
Tampa, Florida 33622  
Telephone: 813-879-1711

Officer in charge: Ivan H. Smith, FAIA

Project manager: Homer Hull, Jr.

Airport Planner-consultant: James A. Meehan

Interiors: Joseph A. Maxwell & Associates

Architects & Engineers: Reynolds, Smith & Hills, AIA

Graphics: Architectural Graphics Assoc., Inc.

Design architect for landside building: Robert E. Boardman, AIA

Design architect for airside building: Walter Staton, AIA

General advisor: Leigh Fisher Associates

Landscape architects: Stresau, Smith & Steward

Sculptor: Roy Butler

#### **Features of Special Note:**

Architecture  
Sculpture  
Landscaping  
Fountains

# **DAA Appendices**

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## Appendix 1

*Background information for the acquisition of works of art.*

### ATLANTA-HARTSFIELD INTERNATIONAL AIRPORT, GEORGIA

The architects for the new airport terminal, Stevens & Wilkinson, Smith Hinchman & Grylls and Minority Airport Architects and Planners (S&W/SH&G/MAAP) and the Bureau of Cultural Affairs (BCA) have collaborated on the selection of sites for art at the airport.

Based on the BCA's experience in administering other public arts programs and its research into the arts commissioning programs of San Francisco, Seattle-Tacoma, the Cambridge/Boston rapid transit system and the New York Transit Authority, the General Services Administration (including art for the new Federal building in Atlanta), recommended a procedure for the convening of panels and the selection of artists.

The Mayor selected a panel based on BCA recommendations, composed of five to seven persons recognized for their critical expertise in contemporary art. The panel includes a representative from the Georgia Council for the Arts and a local representative recommended by the National Endowment for the Arts. This panel was responsible for making final selections of artwork for the airport.

The Federal Aviation Administration, the Department of Aviation, and the contracting airlines have stated that they prefer not to participate as voting panelists, but would like to be apprised of the panel's activities and decisions.

There were three categories of art to be selected—regional, national/international, and a centerpiece. The selection procedures varied for each.

#### Regional:

The BCA administered a regional competition whereby artists submit ten slides of their work for consideration. It was anticipated that 30 to 40 percent of the works selected come from this competition. This percentage of regional artists would provide a regional integrity and insure the airport its individuality.

Because of the anticipated heavy response to this competition, it was recommended that preliminary artists panels be established by the BCA to select those artists/slides appropriate for jurying by the Mayor's panel. The selection of the artists panels would be such that competing artists would not be reviewing their own work. This procedure made the final selection more efficient and insured artist participation from the beginning.

#### National/International:

Rather than hold a national competition, the remaining 60 to 70 percent of the art works to be selected included artists of national, international and regional recognition who were recommended by the Mayor's panel. These artists were voted on by the panel and invited to submit designs for specific sites.

#### Centerpiece (Major International/NEA):

The Bureau of Cultural Affairs has applied for and received a \$50,000 visual arts grant from the National Endowment for the Arts to be matched with local funds. In keeping with the NEA guidelines, a panel of arts experts, was appointed by the Mayor, to select an artist of international importance (along with five to

ten alternates) whose name will be submitted with the the City's grant application. This \$100,000 commission is the centerpiece at the airport.

#### General Procedures:

All artists who have works commissioned for a specific site submitted a preliminary proposal for that site for approval by the panel. At its discretion the panel could select a sub-committee to make final approval of these proposals. The artists received a stipend for the preliminary proposal. This stipend came from the total appropriated for that site. In the event the proposal was rejected by the panel, the stipend coming from the contingency fund, leaving the appropriate amount for that site intact.

When feasible, the panel can purchase existing works of art, bypassing the commissioning process and the risk involved. This would be particularly appropriate for paintings, wall-hangings, and photographs. The New York Transit Authority had excellent results with this method. In that instance, the panel visited artists' studios and galleries. In the interest of time, a central depository could be established where artists who have passed the preliminary screening processes could bring existing works to be viewed by the panel.

In order to implement this program the BCA took the following steps:

1. Met with FAA and S&W/SH&G/MAAP to review the proposed selection process.
2. Reviewed the selection process with the airlines and the Dept. of Aviation (DOA). Mrs. Mondale's staff and the Georgia Council for the Arts all received a copy of the guidelines.
3. Request from the architects finish and color presentation boards depicting the finishes and colors of each area scheduled to receive artwork.
4. Prepared artists contracts, subject to approval by the DOA, FAA, the Atlanta City Council, and the Mayor's office.
5. Prepared plans and elevations of each site to receive artwork.

It was recommended that the art selected for the airport be of museum quality. The kinds of art to be considered, included, but not be restricted to, paintings, wall hangings (rope, weaving, etc.) sculpture in traditional materials, light sculptures, laser sculptures, photographs, drawings, prints, conceptual works, computerized light pieces, and mosaic tile murals.

### NEW YORK JOHN F. KENNEDY INTERNATIONAL AIRPORT

At the JOHN F. KENNEDY International Arrivals and Wing Buildings, 184 works of art have been installed. In addition to the various works of art, lighting has been designed to replace the existing ceiling fixtures adjacent to various art works. This lighting has been focused to highlight certain pieces. Also, name plates containing the artists' name, nationality, title of the work, and media were placed adjacent to each piece or group of works. It is estimated that the entire International Arrivals Building Art Program has cost \$250,000. This is somewhat less than the 1 percent of project cost used as a guideline by the General Services Administration and adopted by the Port Authority of New York and New Jersey.

During the planning stages, it was recognized that the interior spaces at the second floor level were in need of something to counter the huge scale and monochromatic value. A comprehensive art program was conceived by the Planning Division's designers to bring out existing color and human scale and to give

the somewhat repetitious lounge and departure areas a character of their own. The art works include paintings, silk-screens, lithographs, tapestries, and sculpture

The extremely long arrivals corridor on the third floor level requires a different approach than that mentioned above. Some aesthetic treatments have been proposed, including (1) rhythmical patterns of wall panels with changing scale and color patterns, accompanied by appropriate backlighting to create special effects, (2) a photo montage-collage, with changing subject matter, together with an architectural wall treatment that provides an artistic interpretation of the sky, moon, and other terrestrial surfaces, (3) a series of visual effects by the use of lines, shapes, and colors to create an atmosphere of space experiences which would redefine the shape of the corridor, (4) a series of studied panels of geometric shapes that develop a selected theme on a transcending series of pleasant color abstracts, and (5) an introduction to America through its people carried out as an architectural mural with silhouetted black and white photographs on silver mylar which would contain composite groups of people engaged in everyday activities of American life.

For both floors, it was suggested that American art be used as the basic theme for the program—the rationale being that KENNEDY is the gateway to America. The works selected are contemporary and reflect the present day vitality of this country and its leadership in the art world. The majority of art works were selected from young artists who, though not as yet renowned, were judged to be very fine. Complementary works by well-known artists, both foreign and domestic, were included to give a strong base to the collection.

The pre-selection of art works was made through frequent visits to museums, galleries, and artists' studios. Those selected were presented to the Port Authority Committee on Art for final approval. Negotiations with the artists were handled by the Secretary of the Committee on Art.

In view of the constant exposure to the public that these art works have, the Planning Division developed special framing and mounting details to prevent anyone from removing them from the walls. In addition, plexiglass shields have been installed in order to prevent markings or any type of vandalism.

While few people are familiar with the art program, it appears that the public is impressed with the pieces already installed. A representative from the New York City Health and Hospitals Corporation visited the display to obtain information for a similar program being developed for New York City hospitals. It is also interesting to note that some of the works have increased in value since their purchase. For an exhilarating experience, it is recommended that one take time to view the various works on display in the KENNEDY International Arrivals Building.

## **SAN FRANCISCO INTERNATIONAL AIRPORT, CALIFORNIA**

Pursuant to City Charter requirements of San Francisco and with the Art Commission's approval, the Airport has set aside \$1,707,000 (1½ percent of construction costs) for artwork for the north terminal complex and the ground transportation center. The Airports Commission and the Art Commission agreed to proceed on the basis that the entire amount be spent in the public areas of the terminal complex, where the art work can benefit the greatest number of people

On December 15, 1976, an Art Enrichment Working Committee was formed to establish procedures and develop plans for the Art Enrichment Program.

Based on many meetings, discussions, and inspection of the building sites, the Working Committee formulated the schematic program and recommended types of art work. With the approval of this conceptual and schematic plan by the Airports Commission and the Art Commission, the Working Committee proceeded to develop the detailed requirements for the art work. Artists and their proposed works are recommended by the Working Committee to both the Airports Commission and the Art Commission for prior approval before start of any work. The Art Commission awards and administers the contracts, but the design and execution of work must be approved by both commissions.

Various types of art work require different methods for selecting the artists and different lengths of time for execution. The Airports Commission anticipated that the artist selection process would take place over a period of four months. The installation of the art works was scheduled after the completion of the airport construction contracts and prior to the opening of the buildings to the public.

Since 1977 the Airports Commission, with the cooperation of the San Francisco Art Commission, has purchased 28 articles of art at an approximate cost of \$469,000. These items range from small paintings and serigraphs to tapestries and sculptures—costing from \$1,950 to \$146,800 each. A series of Bufano sculptures on loan are now on display between the terminal and boarding areas.

Provision has been made for the display of children's art in the terminal. Two areas have been designated incorporating 12 pictures to show artworks done by school children in San Mateo County. The students and the school are given full credit. These displays are changed periodically and have been well-received.

Following is a copy of the San Francisco Airports Commission resolution concerning the city's Art Enrichment Program.

### **AIRPORTS COMMISSION**

**CITY AND COUNTY OF SAN FRANCISCO  
RESOLUTION NO. 77-0058  
MARCH 15, 1977**

WHEREAS, the City Charter requires that an Art Enrichment Program be implemented in the construction of all new buildings by the City and County of San Francisco, and

WHEREAS, Funds have been set aside for the purpose of implementing such program for the North Terminal Complex and the Ground Transportation Center; and

WHEREAS, The amount of said funds has been approved by the Art Commission in accordance with the provisions of the City Charter; and

WHEREAS, An Art Enrichment Working Committee has been established to formulate plans for the Art Enrichment Program; and

WHEREAS, This Working Committee has completed the development of a conceptual and schematic plan for the Art Enrichment Program, now therefore, be it

RESOLVED, This this Commission approves the conceptual plan, schematic locations, and priorities proposed for the North Terminal Complex.

## Outline Procedures for Art Enrichment Program

1. Issue interdepartmental work order to Art Commission.	Action By SFIA Acct'g.
2. Review and finalize type of art work at each location.	Work'g. Comm.
3. Determine method of artist selection for each location.	Work'g. Comm.
4. Invite artists for competition or negotiation.	Work'g. Comm.
5. Artists to submit proposals.	Artists
6. Review artists' proposals and make recommendations to Airports Commission.	Work'g. Comm.
7. After Airports Commission's approval, submit recommendations to Art Commission for their approval.	Work'g. Comm.
8. Draft contract between City and artists.	Work'g. Comm.
9. Airports Commission authorizes award of contracts.	SFIA Engineer'g.
10. Transfer funds for contract award.	SFIA Acct'g.
11. Art Commission awards contracts to artists.	Art Commission
12. Certification of contracts.	Controller
13. Artists to submit finalized design.	Artists
14. Approval of final design by Airports Commission.	SFIA Engineer'g.
15. Approval of final design by Art Commission.	Art Commission
16. Implement art work.	Artists
17. Approval of art work installation by Airports Commission.	SFIA Engineer'g.
18. Approval of art work installation by Art Commission.	Art Commission
19. Final payment to artists.	Art Comm. & Controller
20. Transfer balance of funds to Airport.	Art Commission

### North Terminal Complex

## ART ENRICHMENT PROGRAM

### Proposed Location

#### SECOND LEVEL--NORTH TERMINAL

1. \* Southwest Concourse--West Wall  
24'H x 18'W  
\* most favorable site out of 1, 2A and 2B.
2. A. Northwest Concourse--West Wall  
24'H x 18'W  
B. East Wall--above door
3. South Wall of Northwest and Northeast Concourse
4. Lounge 208--  
West Wall--12'H x 28'W  
East Wall--12'H x 25'W
5. Lounge 251--  
West Wall--12'H x 28'W  
East Wall--12'H x 28'W
6. Security Area to Connector  
West Wall--10'H x 64'W  
East Wall--10'H x 64'W

### Type of Art Work

- Bas Relief (3 dimensional painting, wood or plastic material)--  
should be installed on moveable panels (walls may be  
moved). Color essential.
- Bas Relief--same as 1 above.
- Bas Relief--same as 1 & 2 above.
- Series of paintings--double required number to provide rotating  
exhibition (actual number to be decided later).
- Fibre or textile wall hanging on each side of the bay--bay  
approx. 60' wide.
- Fibre or textile wall hanging on each side of the bay--bay  
approx. 60' wide or 2 paintings on each side.
- Limited Competition--possible mural area. Wall could be  
divided into two areas; possible use of ceramic tiles; material  
must be of a durable nature.



7. Superstairs—North Crossing  
24'L x 12'W x 20'H±

Hanging—translucent but with color possibly clear plastic, acrylic or lucite; something to carry out a feeling of light and movement. A suggestion of use of stainless steel. Commission.

8. Superstairs—East Crossing  
24'L x 12'W x 20'H±

Hanging—same as item 7 above. View is not as dramatic.

## SECOND LEVEL—BOARDING AREAS H & I AND CONNECTOR

9. Concourse I—Seating Area #2  
West Wall 24'W x 12'H
10. Concourse I—Seating Area #3  
East Wall 24'W x 12'H
11. Lounge (Hub)—Southwest & Northwest  
Walls 46'W x 10'H (both walls)
12. Central Lobby (Hub)  
Octagonal Area 29' across with  
31' ceiling height
13. Ground Level at Superstairs  
North Crossing—10'10" ceiling ht.
14. Ground Level at Superstairs  
East Crossing—10'10" ceiling ht.
15. Connector  
10' ceiling height
16. Concourse I—Seating Area #1  
12' ceiling height
17. A. Concourse I—Upper wall  
B. Concourse I—Upper wall

Mural, hanging or painting. Must be considered in relation to location #17.

Mural, hanging or painting. Must be considered in relation to location #17.

Bas relief on both walls. (Discussion held on possible use of stained glass—however, decision made to discard this idea)

Suspended sculpture; no seating in this area because of tremendous flow of people—also all the signing for the airlines should be left clear. Thought to be given to a suspended sculpture with a low floor piece; (kinetic) stalagmite sculpture. Limited competition—possibly 10.

Sculpture of durable material. %%%—Low priority

Sculpture of durable material. %%%—Low priority.

Commission for a light sculpture—possibly a strip light sculpture which provides its own illumination; eg. lucite, metal strips or wire. Important that signs be visible—8 ft. clearance needed.

Sculpture of durable material. %%%—Low priority.

Painting or hanging.  
Painting or hanging.

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Allocation for actual purchases will be approximately \$1.4 million

## SEATTLE-TACOMA INTERNATIONAL AIRPORT, WASHINGTON

The SEA-TAC Airport Art Program was initiated by the airport architects, The Richardson Associates, who broached the subject to the Port of Seattle Commission in 1969. Although earlier stages of planning did not include an art program, James E. Hussey of the architect's office believed that works of art should be included in the new airport construction. The architects felt that planning for the incorporation of these works had to proceed to allow for coordinated installation once the airport expansion was completed.

The Port of Seattle Commission, sparked by one commissioner who had a particularly strong interest in community cultural affairs, John Haydon, voted on May 29, 1969, to authorize \$300,000 for the purchase of art. This amount is approximately 1.2 percent of the passenger terminal costs, but is only 0.3 percent of total airport expansion costs. It is important to note that these funds for art, just as other airport capital improvements, come from revenue bonds paid off through landing fees and concession revenues; they represent a commitment by the airlines and concessionaires to art in public places.

The airport architects recommended to the Commission that the art program be developed and that the works be selected by a committee appointed for that specific purpose. This suggestion was based on the desire to shelter the Commission from the inevitable criticism on the selection of art and, more importantly, to provide an expert and balanced team to recommend acquisitions. The Commission agreed with this approach and subsequently approved the architects' suggested committee.

**Selection Committee**—The Art Selection Committee was composed of John Denman, a Seattle collector, noted for his interest in work being done throughout the Nation, James L. Haseltine, Executive Director of the Washington State Arts Commission, John Hauberg, Seattle business leader and noted collector of Northwest Contemporary, Indian, and Pre-Columbian art, Thomas Maytham, then-Assistant Director and Acting Director of the Seattle Art Museum, Doris Shadbolt, Senior Curator of the Vancouver, British Columbia, Art Gallery and a member of the Canadian Airport Art Committee, and Langdon Simons, a Seattle businessman and collector. In addition, the Committee included two members from the airport architects' office, James E. Hussey and Gerald A. Williams.

**General Policy**—Several representatives from the Port Commission and staff were included in the initial series of Committee meetings to help formulate basic policies, including consideration of the most appropriate locations and the general range of artistic expression to be included in the program.

The Committee felt that the SEA-TAC art program should include work by both locally and nationally known artists and that the collection should be of museum quality.

**Location**—Preliminary considerations for the location of works of art ranged over the entire site, including land adjacent to the airport freeways. The Committee soon determined that the main floor (ticketing level) of the passenger terminal should be the principal area in which to place works of art. This is the area in which most passengers have time to spend at the airport between ticketing and flight departure. Areas next to the 50 MPH access road appeared capable of absorbing the entire art budget with little visible result.

The design of the terminal provides a series of quiet, low-ceilinged, carpeted lounges adjacent to major pedestrian circulation. The art Committee and the architects agreed that the lounge areas would be the best location for works of art. The Committee felt that the unique quality of the works would provide a distinctive aspect to each lounge and help psychologically to reduce the scale of the airport complex.

One central, two-story, enclosed plaza was designated for a major work as part of the total program to provide focus and orientation for the traveler.

In addition, the airport chapel was designated as an appropriate location for a portion of the art program.

**Process of Selection**—The Committee followed its discussion of location with the consideration of artist selection. While each member of the Committee contributed to the master list of artists, it was also decided that one lounge would include works by Washington State artists through competition and that there would be a competition for a major sculpture in the plaza. The contest would be held in the early stages of the program.

**Washington State Competition**—A competition was widely and publicly announced, open to Washington State resident artists. The lounge location was designated at the suggestion of the architects, and the Committee was given the discretion to determine the artists and the number of works to be placed within the space. Over 100 artists entered this competition with sketches, models, and full-sized samples of work, as well as slides and resumes. From the entries, the Committee selected a wall painting 9 by 46 feet, proposed by Francis Celentano, a sculpture 5 feet square and 9 feet high proposed by John Wharton, and a series of multiple paintings by Christopher English. The Committee also agreed that other entrants in the competition demonstrated sufficient merit to warrant consideration for works to be located in other parts of the terminal. With the artists' permission, slides were subsequently sent to the Henry Gallery Archives.

**Plaza Competition**—For the major commission in the plaza, the Committee, after much discussion, determined that a limited competition would be the best method of selection. After reviewing all the names on its list, four artists were selected to develop sketches and models: Ronald Bladen, Len Lye, Robert Maki, and George Rickey. The artists were paid \$2,000 each for submittals in two stages, sketches in the first and models in the second, to fit into a scale model of the plaza. Robert Maki was selected and used the room model in further developmental studies of his work.

**Other Commissions and Purchases**—The Committee felt that it was important to provide good examples of work by American artists of outstanding reputation because SEA-TAC Airport is an international gateway. Consequently, works by Louise Nevelson, Frank Stella, Robert Rauschenberg, and James Seawright and Peter Phillips were selected. The latter is a computer-driven sound and light system set into a room that was designed by the kinetic/electronic sculptor, James Seawright.

Considering compatible relationships, the Committee then selected local artists Jon Geise, Paul R. Jenkins, Thomas Horder, Ted Jonsson, Gloria Crouse, Johsel Namkung, and Jennifer Lew and Richard Proctor to execute various commissioned works in painting, sculpture, photography, and other media. The

architects were also able to persuade the University of Washington's Burke Museum to provide an exhibit from its renowned Northwest Indian collection.

The development, selection, and execution process initiated in 1969 came to fruition with the installation of all but the neon sculpture and the Burke Museum exhibit.

**Critical Reaction**—To date, there has been widespread praise of the Port of Seattle for the program as a whole, together with mixed reviews of the various works. The Maki sculpture has drawn a good deal of criticism, partly because of its lack of color in a neutrally colored space and partly because some feel that it should have been taller to "break through" the horizontal lines established by the mezzanine around the plaza. The neon sculpture by Jon Geise, the Rauschenberg multiple, the Holder painting, the Seawright Phillips room, and the Stella Nevelson works have all received praise from a wide spectrum of people, including those considered part of the general public having little prior contact with contemporary art.

**Evaluation of Process**—The architects feel that the process of selection was relatively sound. However, if they were to do it again, they would try to include one or more artists on the Selection Committee to further enrich the discussion and development process.

**Airport Architects**—The graphic design services of The Richardson Associates range broadly from major graphic systems to small unique graphic design problems for both interior and exterior application. The design spirit of the graphics varies from disciplined and concise to playful or whimsical, depending on the situation. In all cases the graphic designer is concerned with the subtle and carefully studied use of color, form, material, texture, and light. The Richardson Associates has developed refined skills in the effective use of graphic design. Technical aspects include material, fabrication, and electronics. The firm also is experienced in numerous installation techniques, contracting, and other procurement procedures. Services provided include comprehensive visual communications systems, decorative, representational and abstract graphics, corporate identification programs, logo design, and commercial graphics.

## Appendix 2-Bibliography

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*Terminal Amenities Program for the Dallas-Fort Worth Regional Airport* - Flambert and Flambert, Inc.

*The Apron-Terminal Complex—Analysis of Concepts for Evaluation of Terminal Buildings*, September 1973 - FAA Report FA-RD-73-82.

*Object and the Environment* (cassette and slides), The use and placement of outdoor sculpture - Margaret Roth Robinette, Distributed by American Society of Landscape Architects Foundation, (book is also available).

*A Guide to Visual Quality in Noise Barrier Design - Implementation Package 77-12* - U.S. Department of Transportation, Federal Highway Administration 20590.\*

*I-70 In a Mountain Environment—Vail Pass, Colorado*, U.S. DOT/FWHA.

*Art in Architecture*, 1968 - Mr. Louis G. Hedstone, FAIA, McGraw-Hill Publishers.

*Plants/People and Environmental Quality*, 1972 - Gary O. Robinette, Distributed by U.S. DOI, National Park Service and the American Society of Landscape Architects Foundation.

## BIBLIOGRAPHIC DESCRIPTIONS

**The Apron and Terminal Building**—This document presents planning recommendations for terminal building areas and apron space. The apron and terminal building areas are defined as those areas included in and limited by the curb roadway and associated parking on the landside and by taxiway access to the apron on the airside. The principal areas presented are apron, connector, terminal, curb roadways, and parking. Space considerations are presented as they are affected by the four principal concepts discussed in the book and airport traffic volumes, types, and station characteristics.

A presentation of area and layout for all major elements of the terminal building is illustrated in tabular, graphic, and plan formats.

Sources of planning information and guidance for the procurement and input of this information are provided. Gross terminal sizing recommendations for medium and long range planning are presented.

Comparative costs for on and off airport projects are discussed.

**A Guide to Visual Quality in Noise Barrier Design**—Implementation Package 77-12 introduces the basic principles of visual quality in general terms and illustrates the application of these principles to the design of highway noise barriers. It should be noted that these principles can be applied to many airport construction projects. It illustrates the potential visual problems created by the construction of noise barriers and identifies design measures which minimize visual disruption of the environment.

**I-70, In a Mountain Environment—Vail Pass, Colorado**—This is the story of how, through innovative designs and construction techniques, the challenge of fitting an interstate highway into a sensitive and scenic mountain environment was met; how the decision to build along existing U.S. Route 6 provided an opportunity to repair the scars on the landscape made during the construction of U.S. 6; and how commitments made in the environmental impact statement were carried out in the design and construction of the project. This document relates what has been achieved by cooperation among the Colorado Department of Highways, the Federal Highway Administration, the U.S. Department of Agriculture Forest Service, the Colorado Division of Wildlife, and other agencies. Finally, it is a booklet that can be a source of ideas for solutions to environmental problems that may be encountered by other highway engineers as well as those planning airport projects throughout the country.

\* - Description attached.